



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : Confirmation No. 7022

Mitsuaki OSHIMA et al. : Docket No. 2000_1328

Serial No. 09/672,946 : Group Art Unit 2634

Filed September 29, 2000 : Examiner A. Le

COMMUNICATION SYSTEM :

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SUBMISSION OF FORMAL DRAWINGS

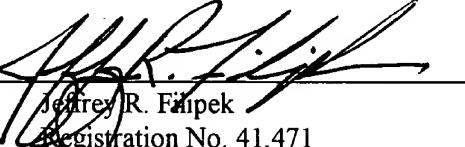
Assistant Commissioner for Patents,
Washington, D.C.

Sir:

As required by the Examiner in the Office Action mailed September 16, 2002, 178 sheets of formal (8½ x 11) drawings (Figs. 1-179) are submitted herewith.

Respectfully submitted,

Mitsuaki OSHIMA et al.

By: 

Jeffrey R. Filipk
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Attorney for Patentees

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March 17, 2003

U.S. Patent

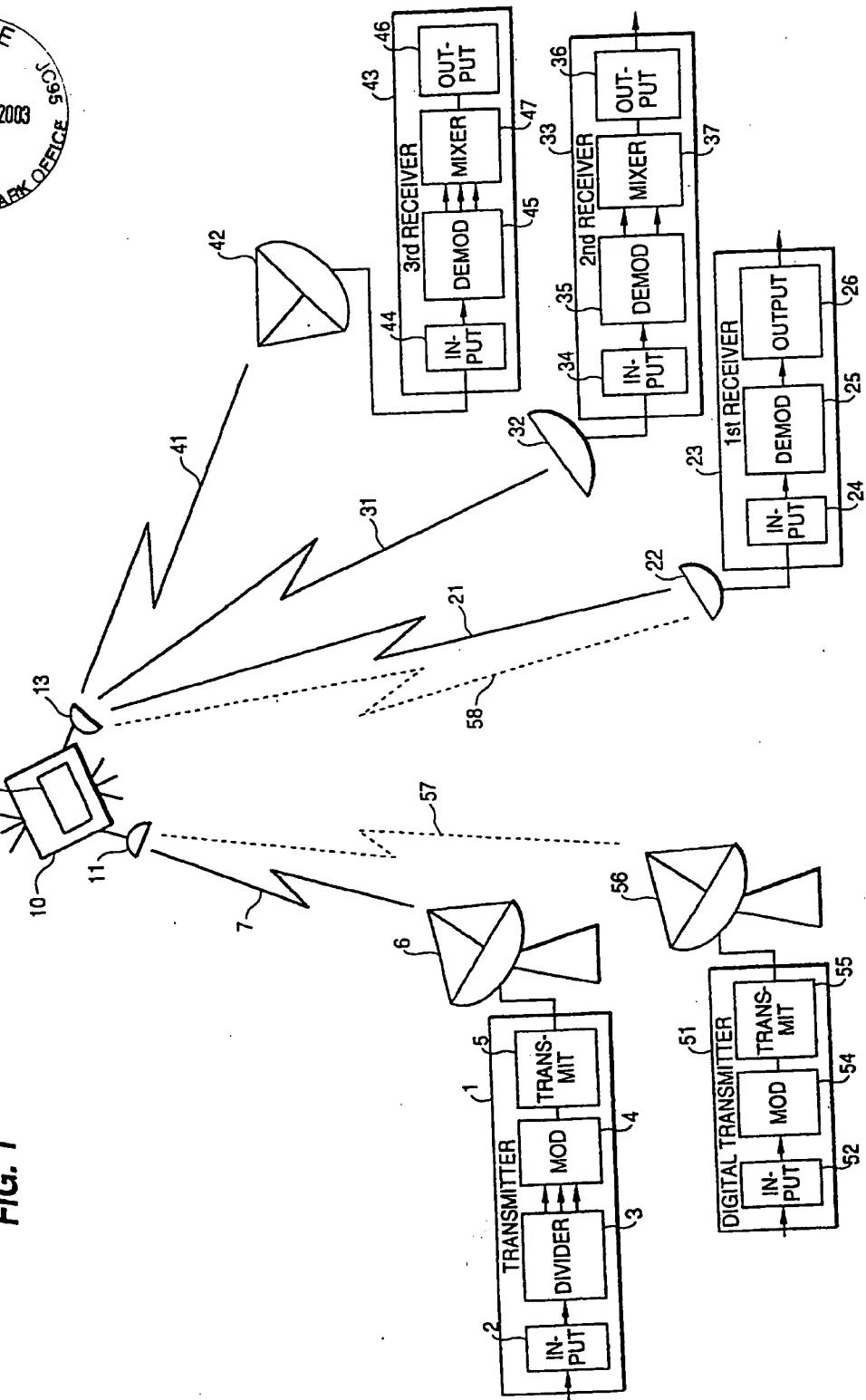
Feb. 4, 1997

Sheet 1 of 178

5,600,672



FIG. 1



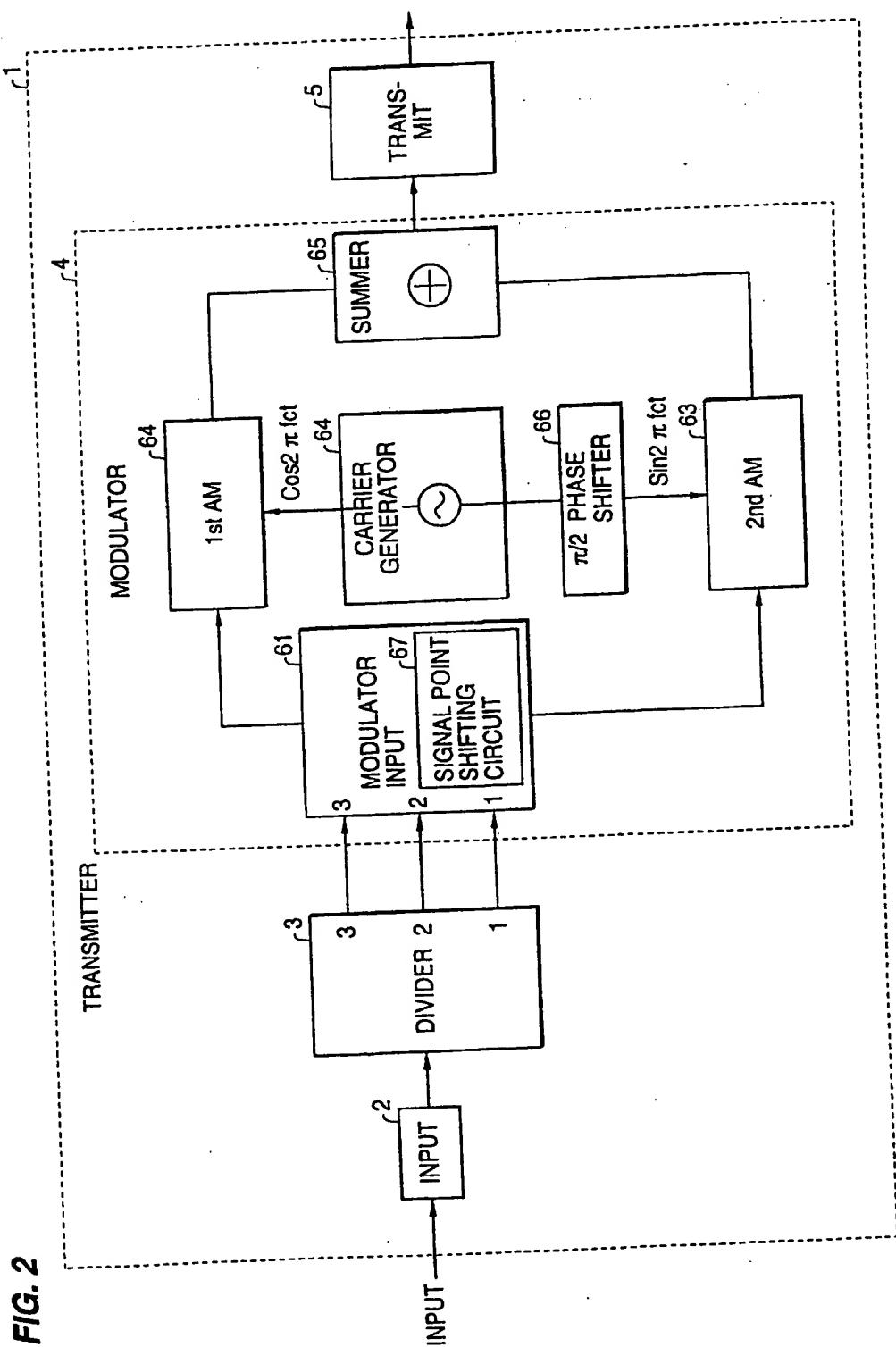
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Feb. 4, 1997

Sheet 2 of 178

5,600,672



U.S. Patent

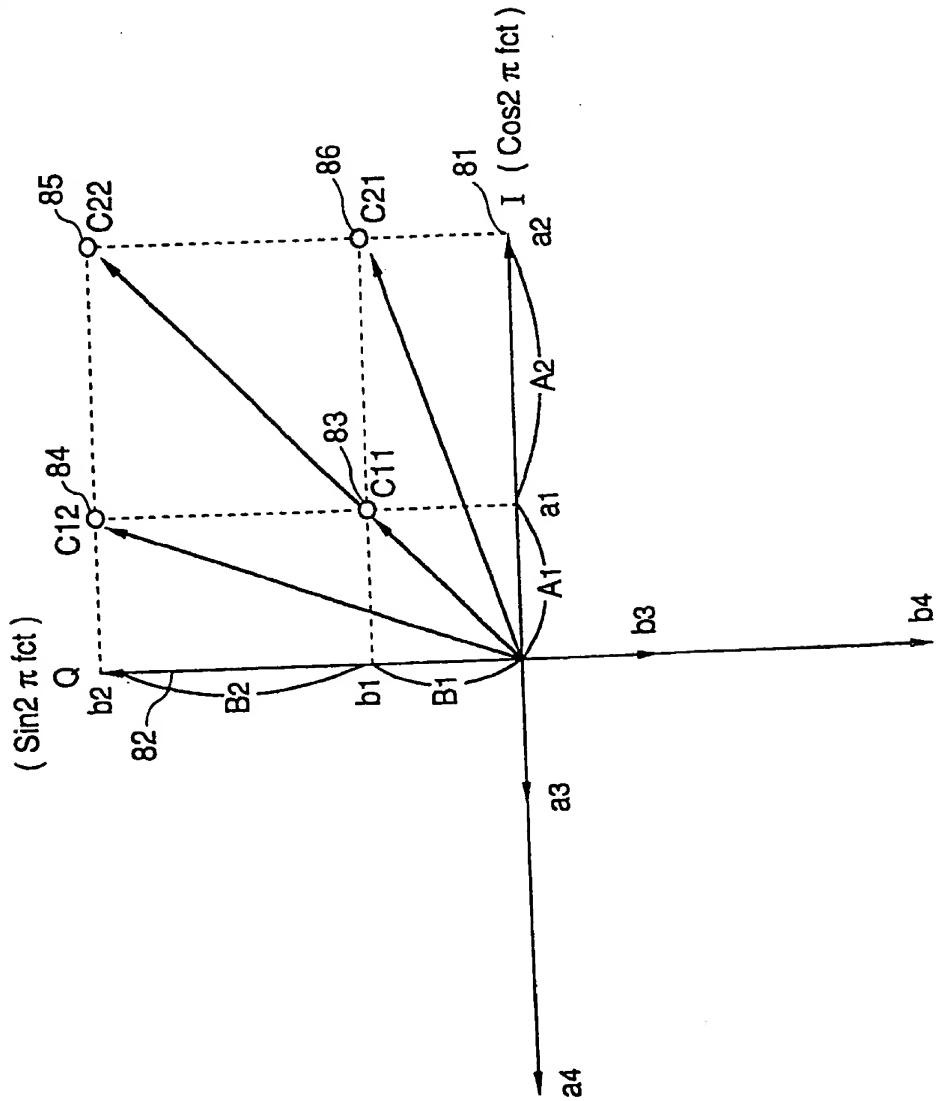
Feb. 4, 1997

Sheet 3 of 178

5,600,672



FIG. 3



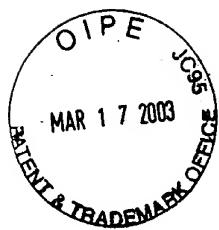


FIG. 4

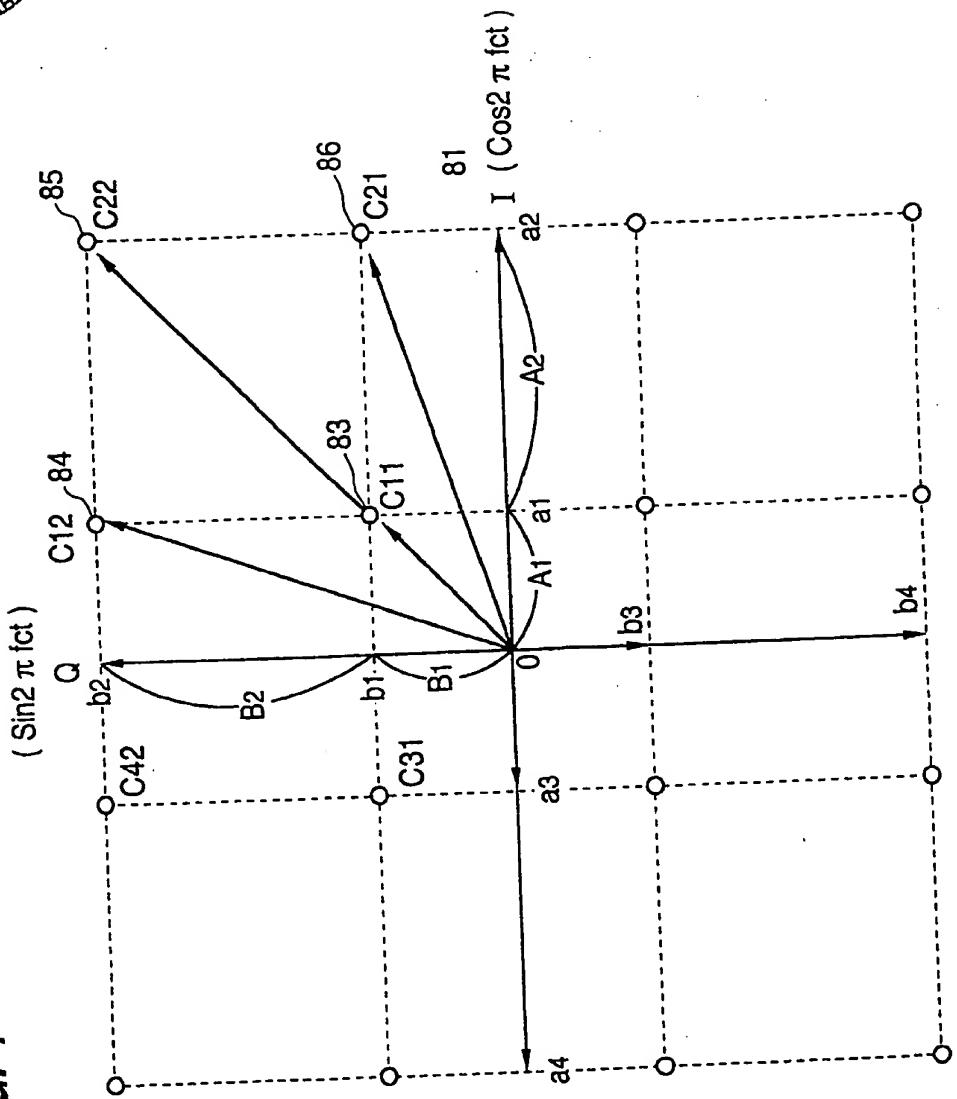
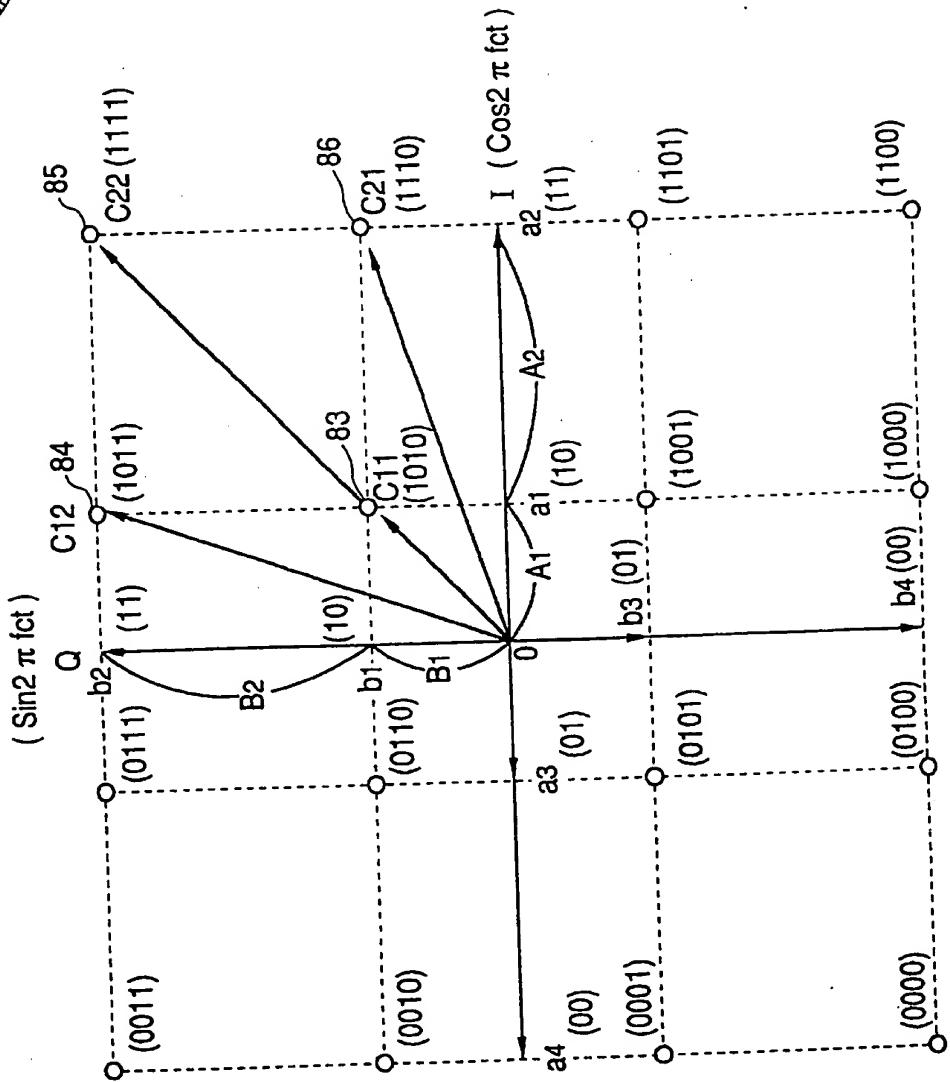




FIG. 5



U.S. Patent

Feb. 4, 1997

Sheet 6 of 178

5,600,672



FIG. 6

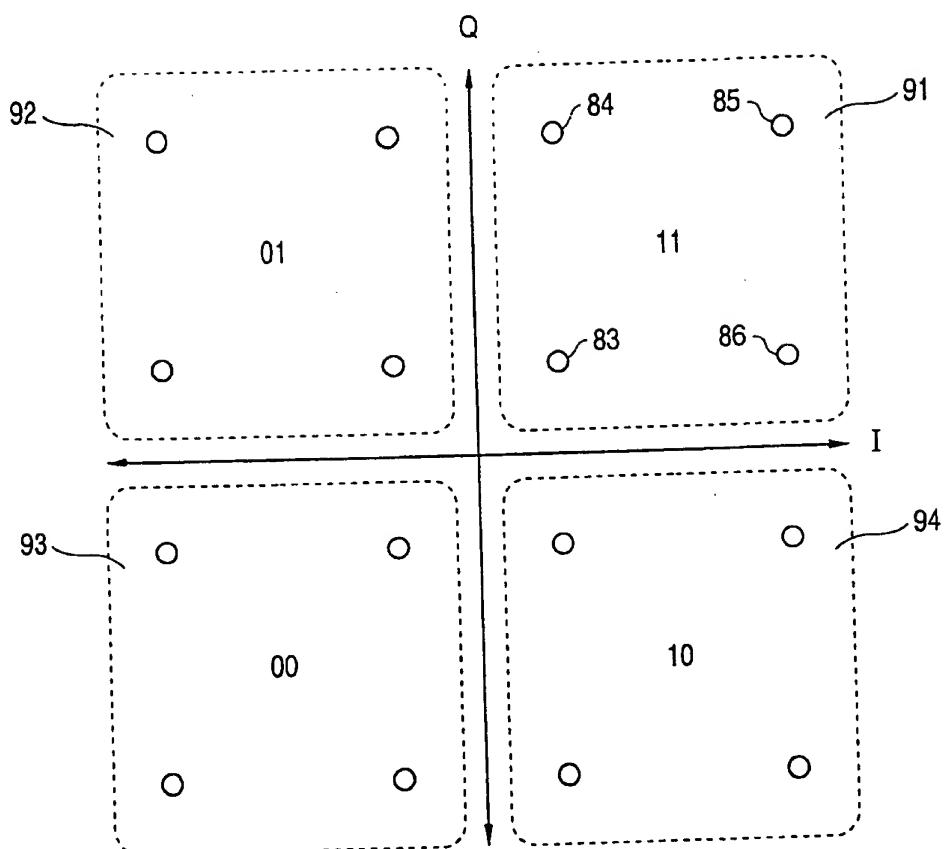


FIG. 7

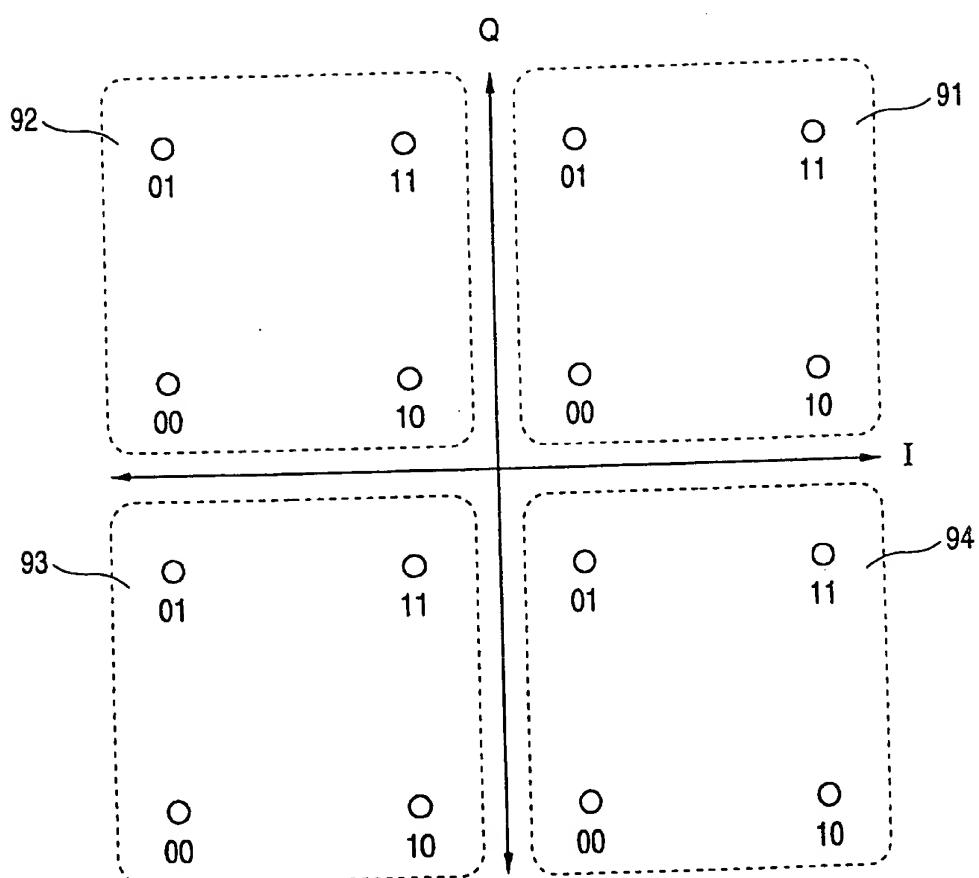


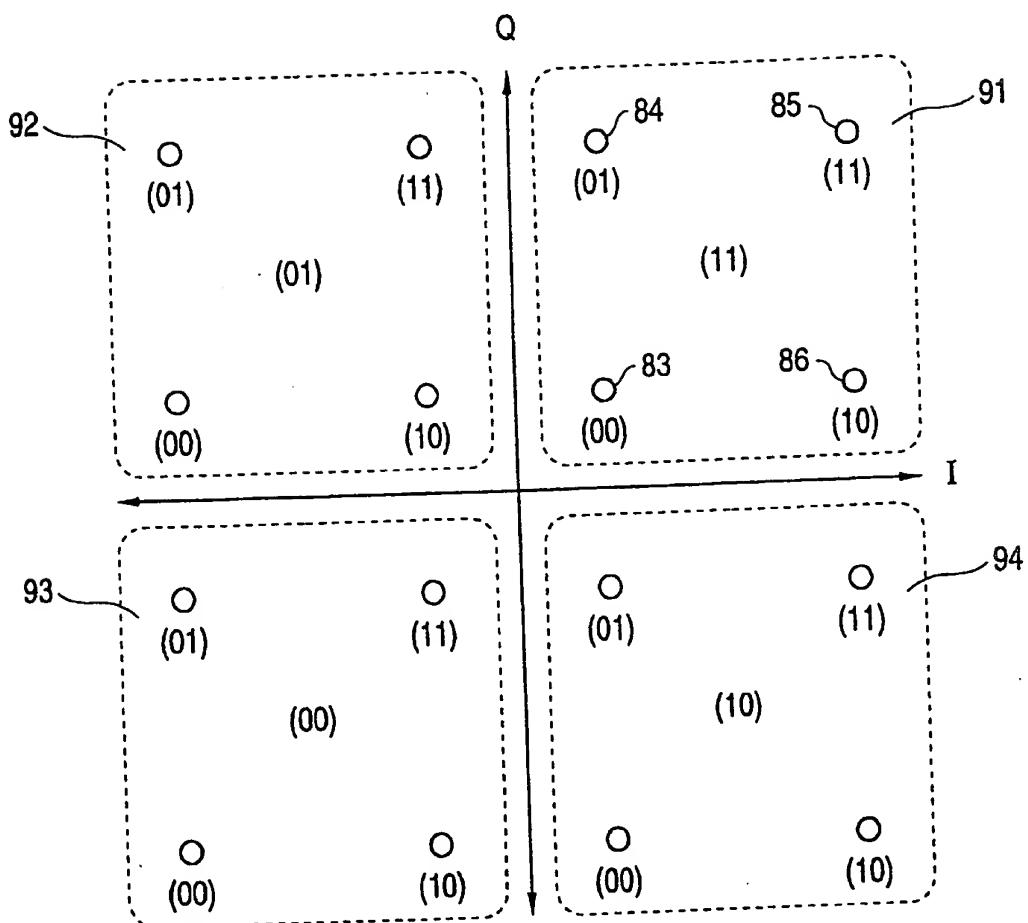
FIG. 8

FIG. 9

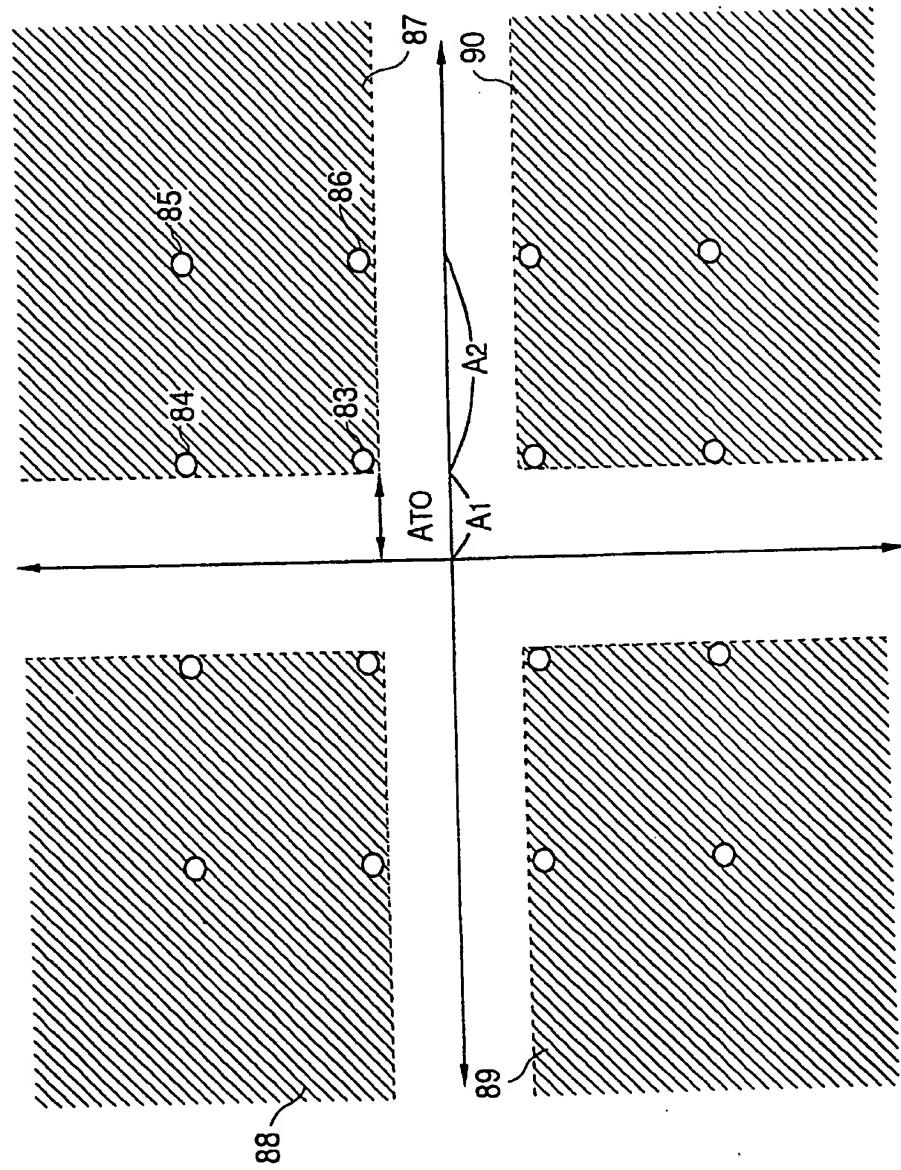
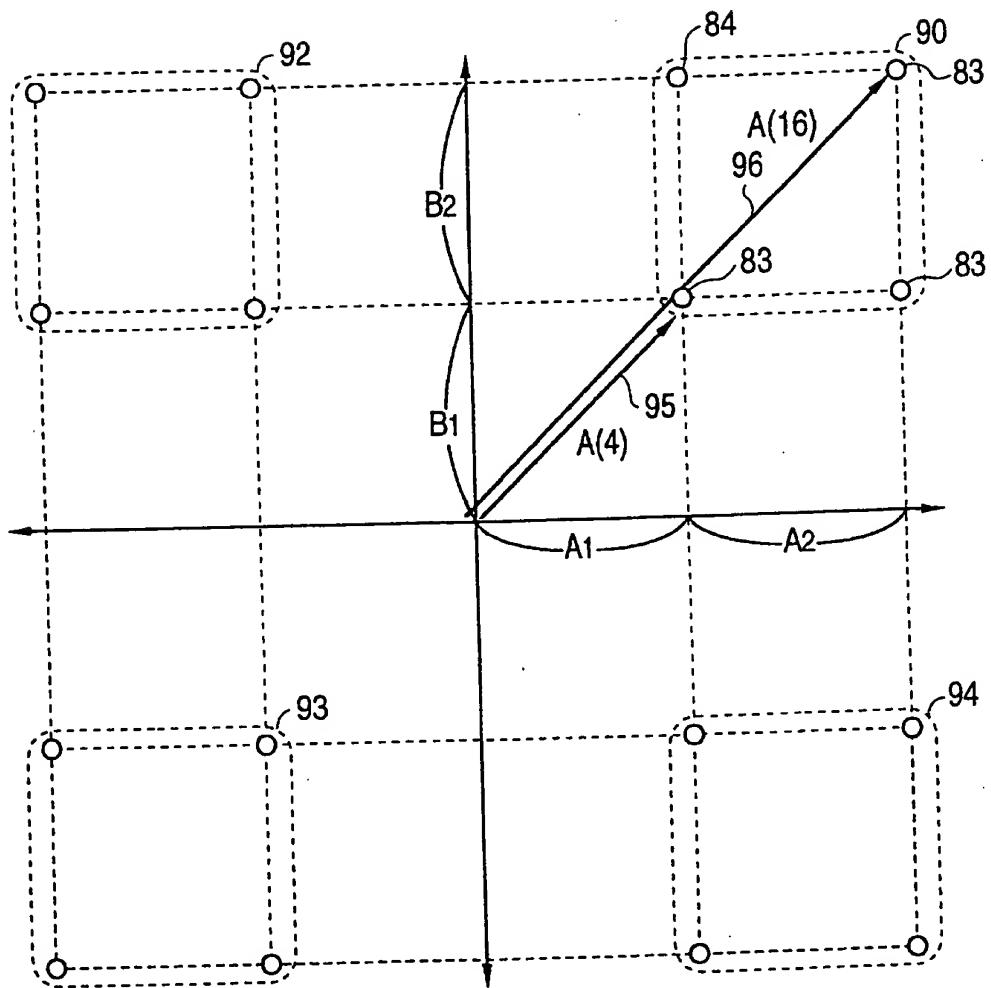


FIG. 10

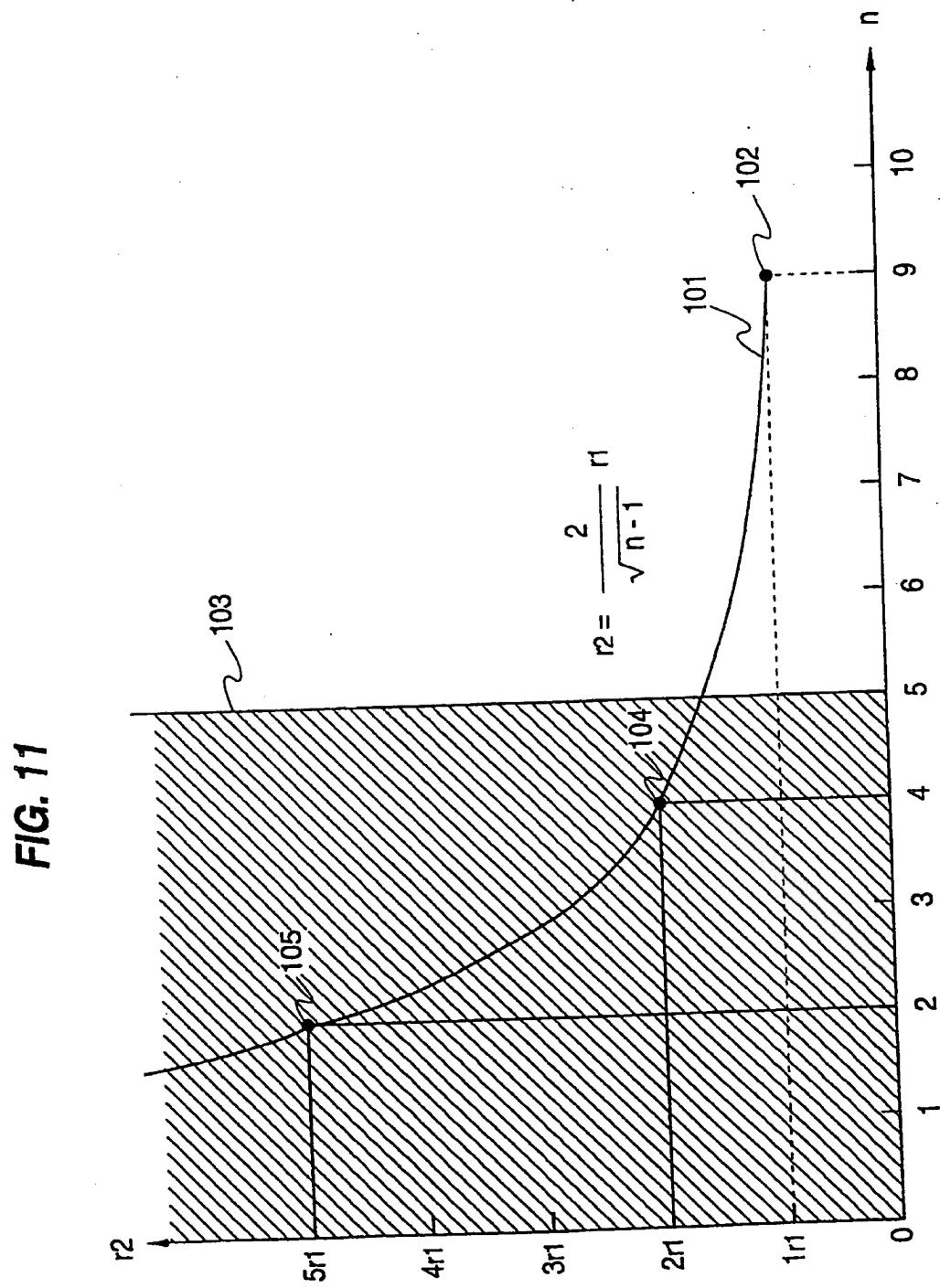


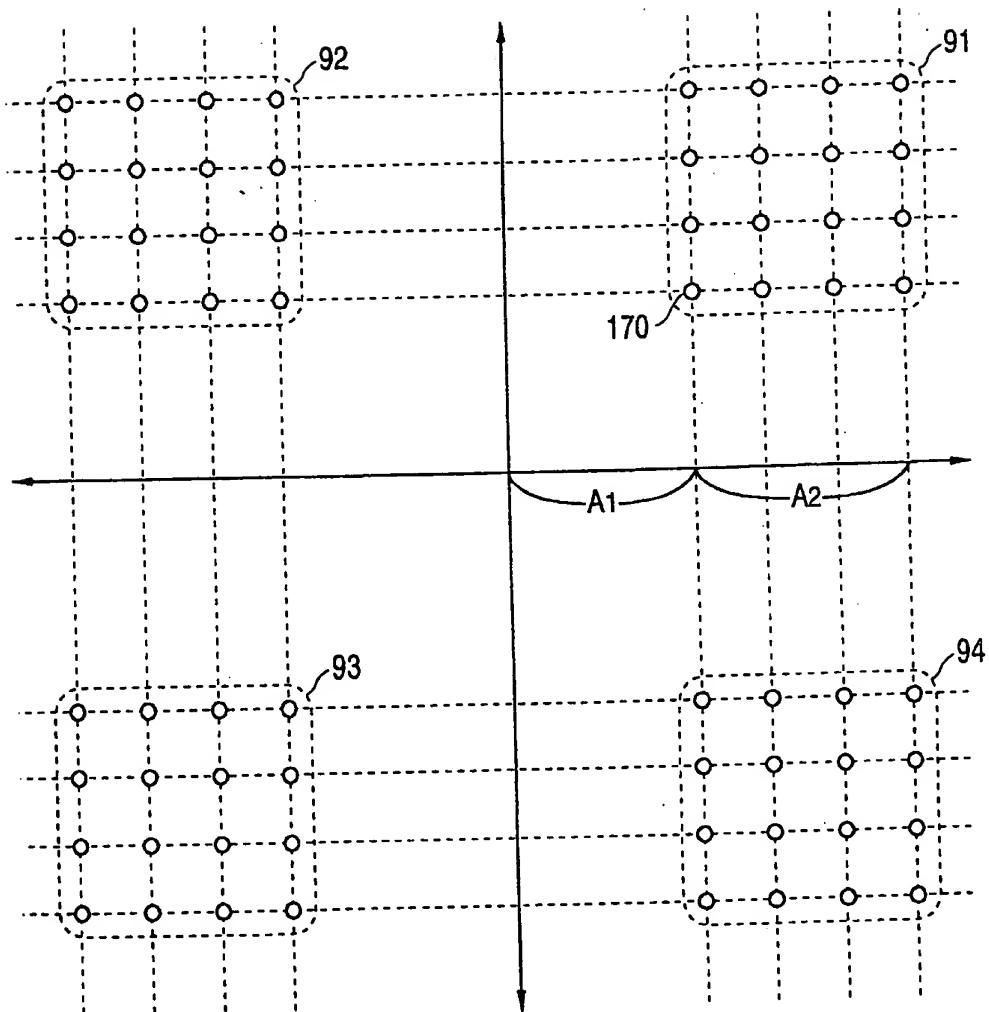
FIG. 12

FIG. 13

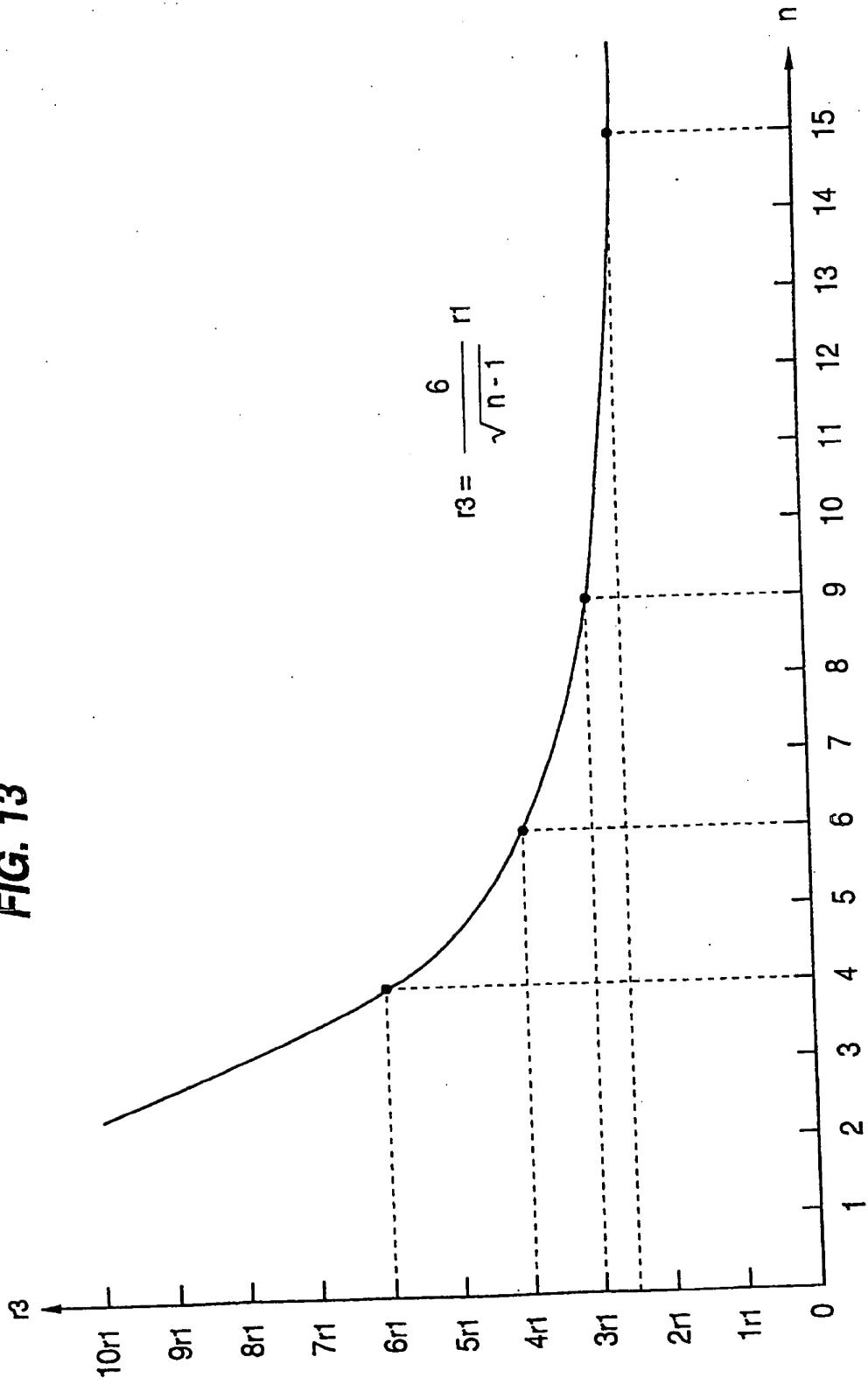


FIG. 14

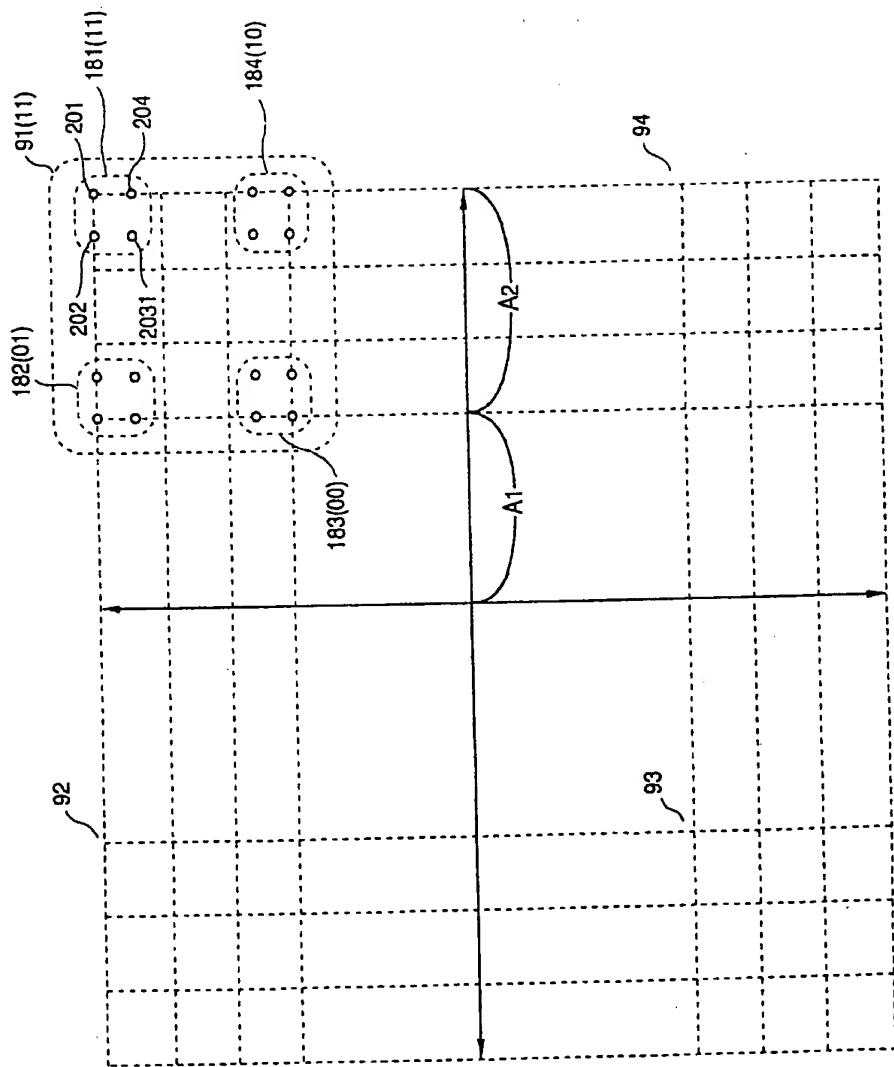


FIG. 15

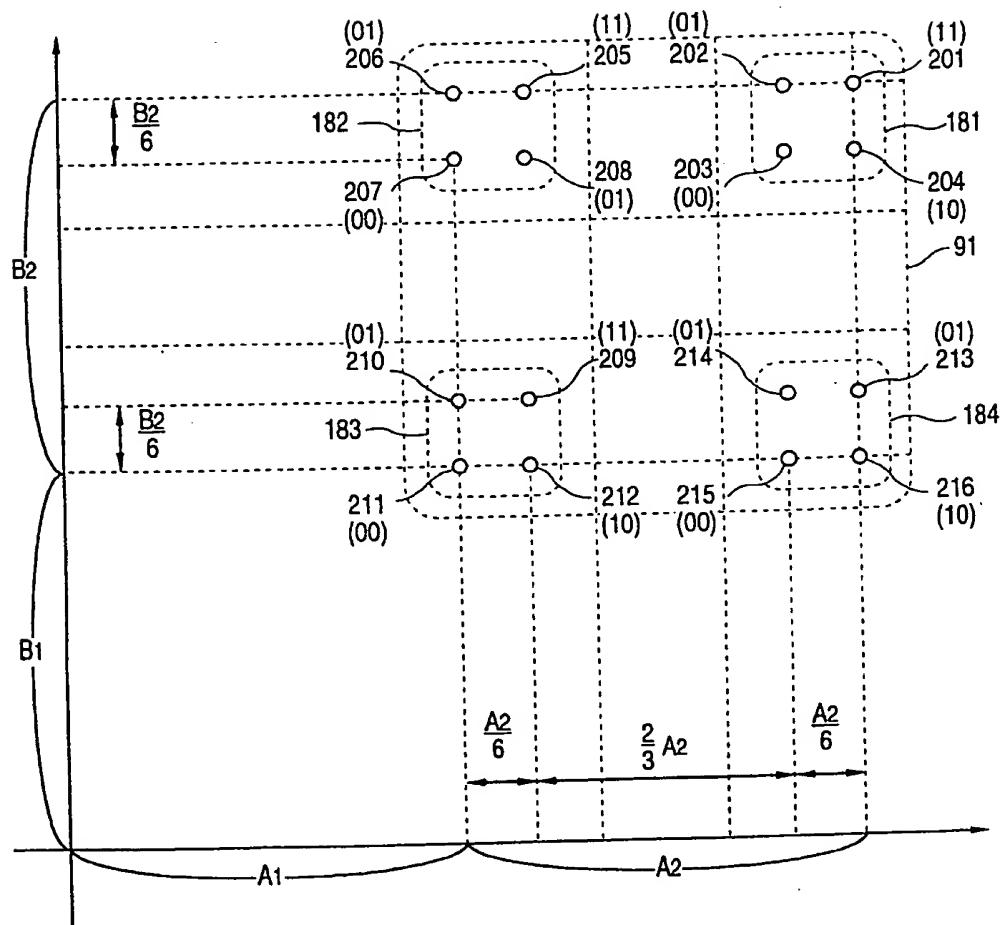
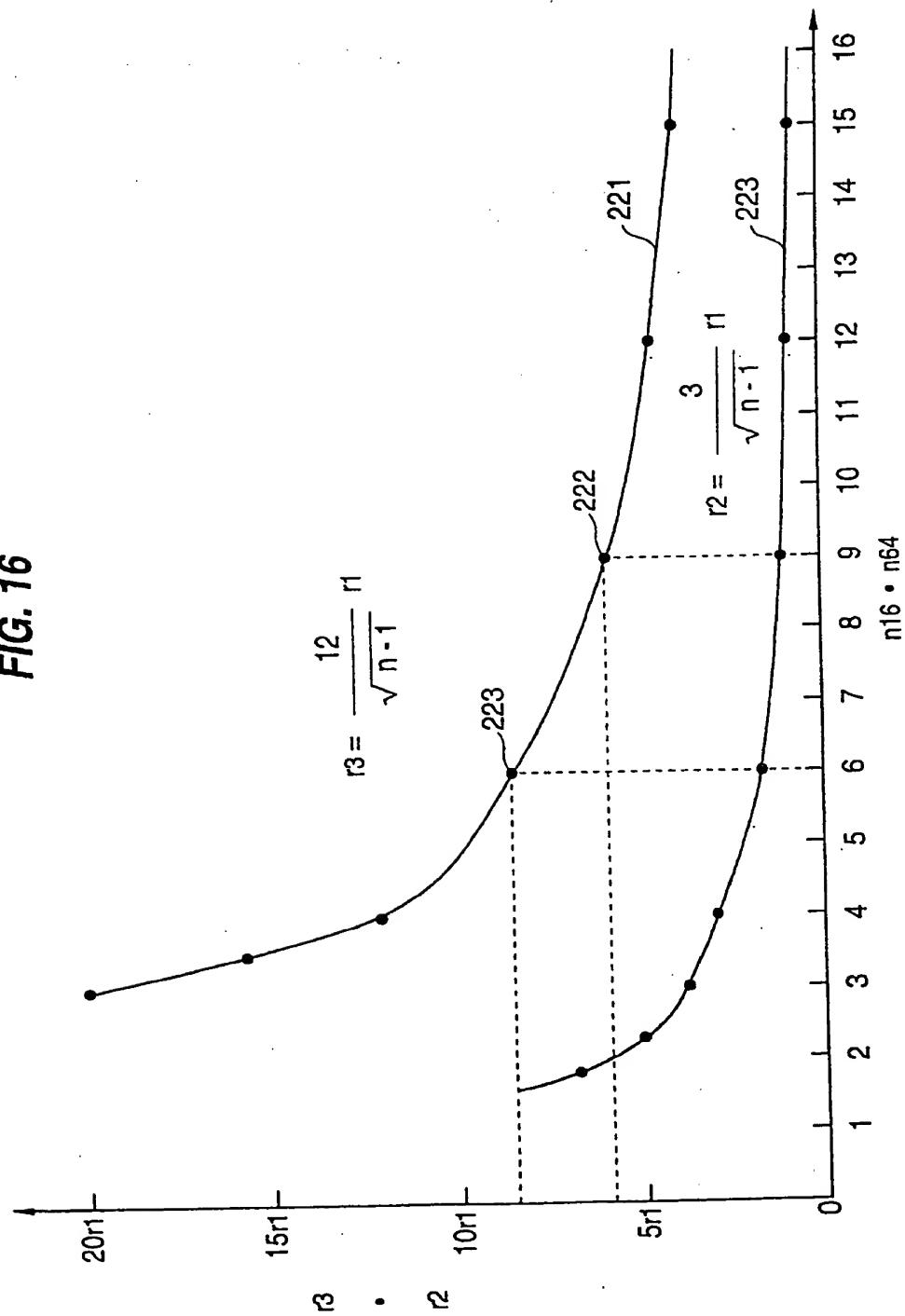


FIG. 16



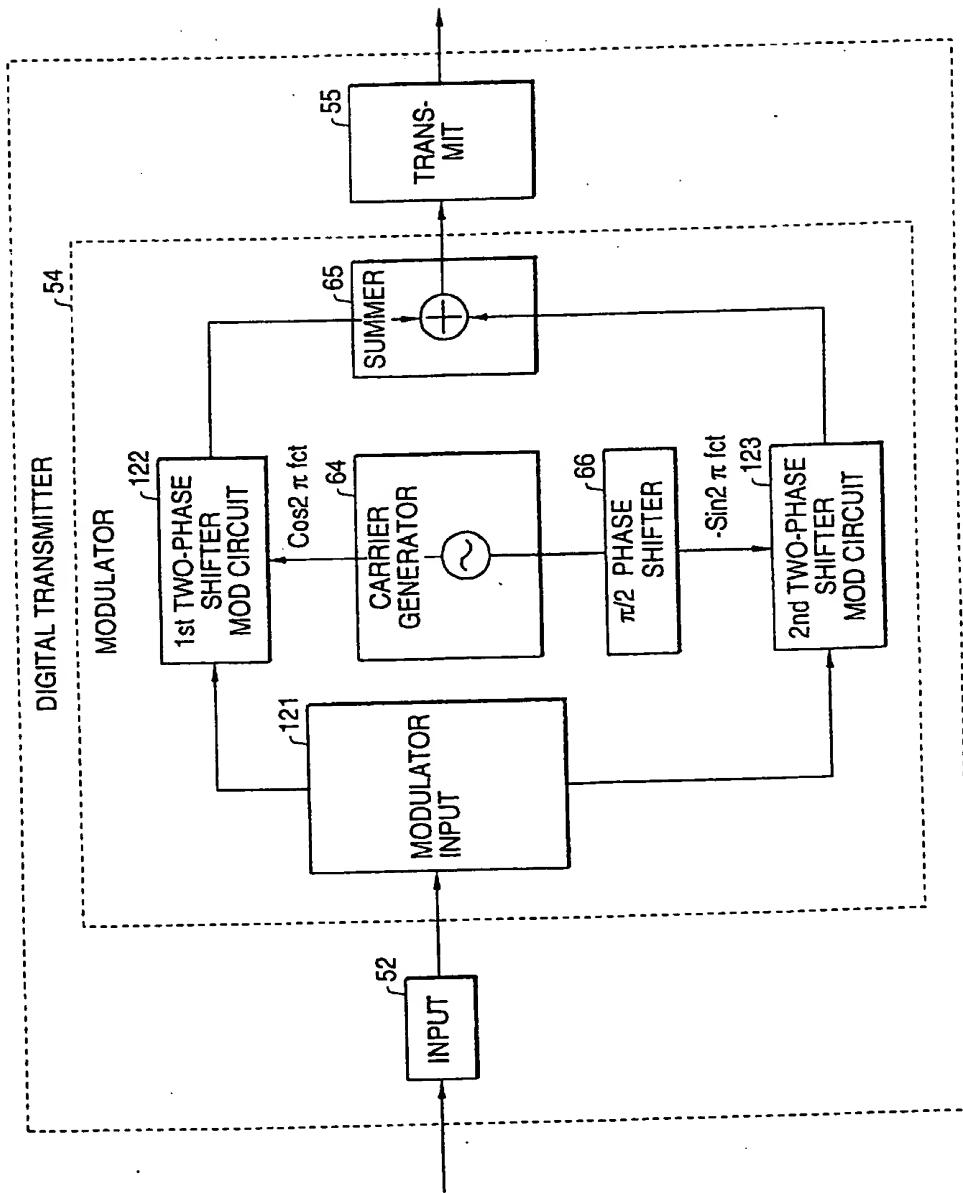
**FIG. 17**

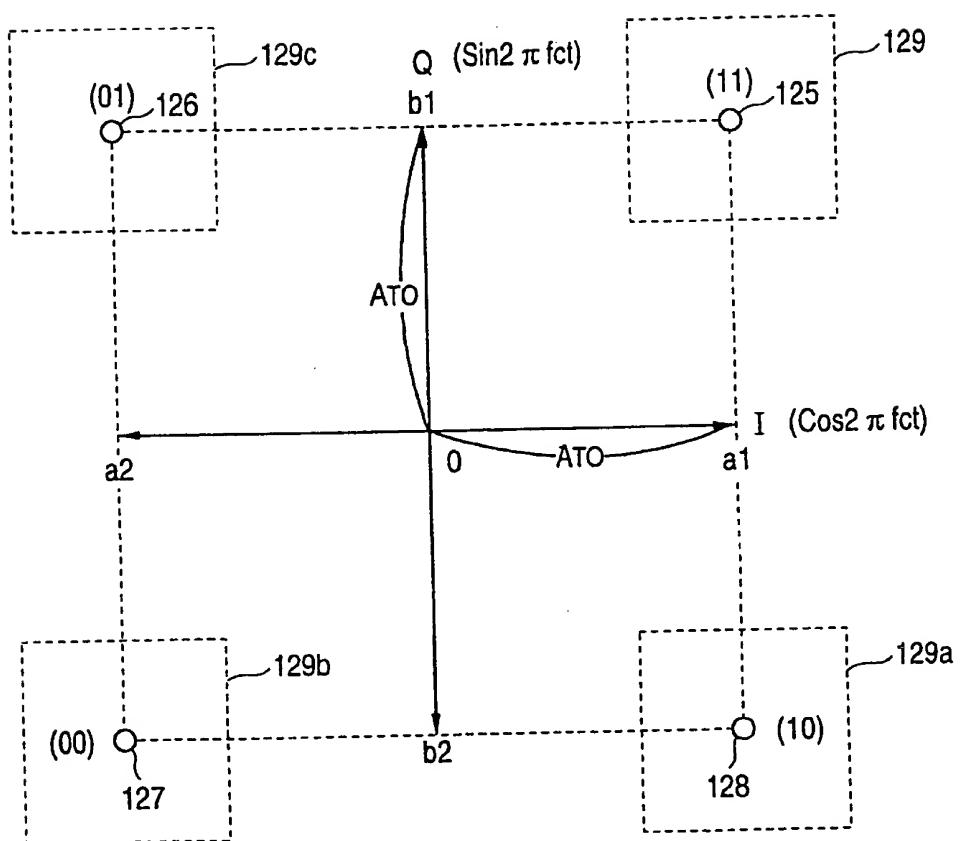
FIG. 18

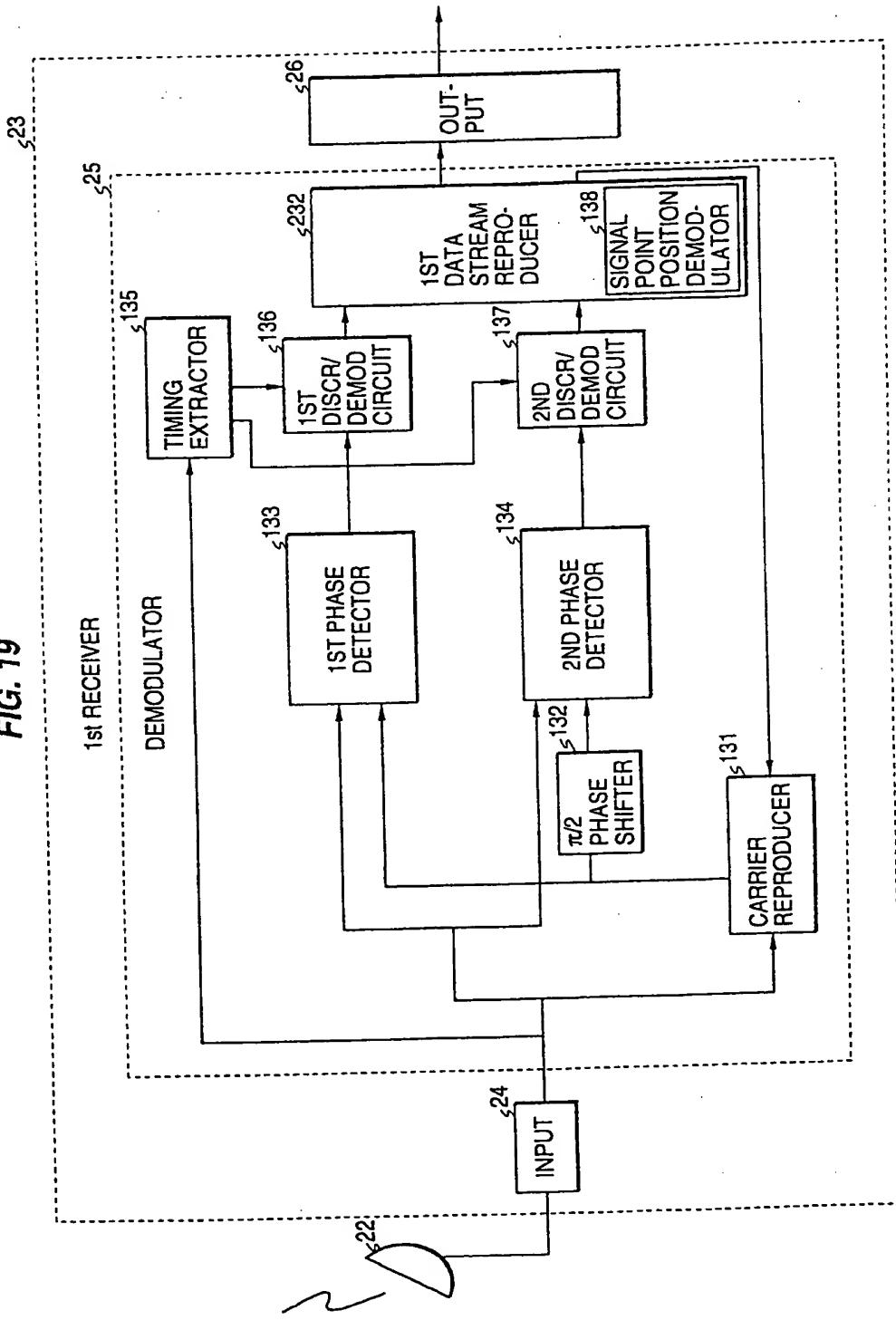
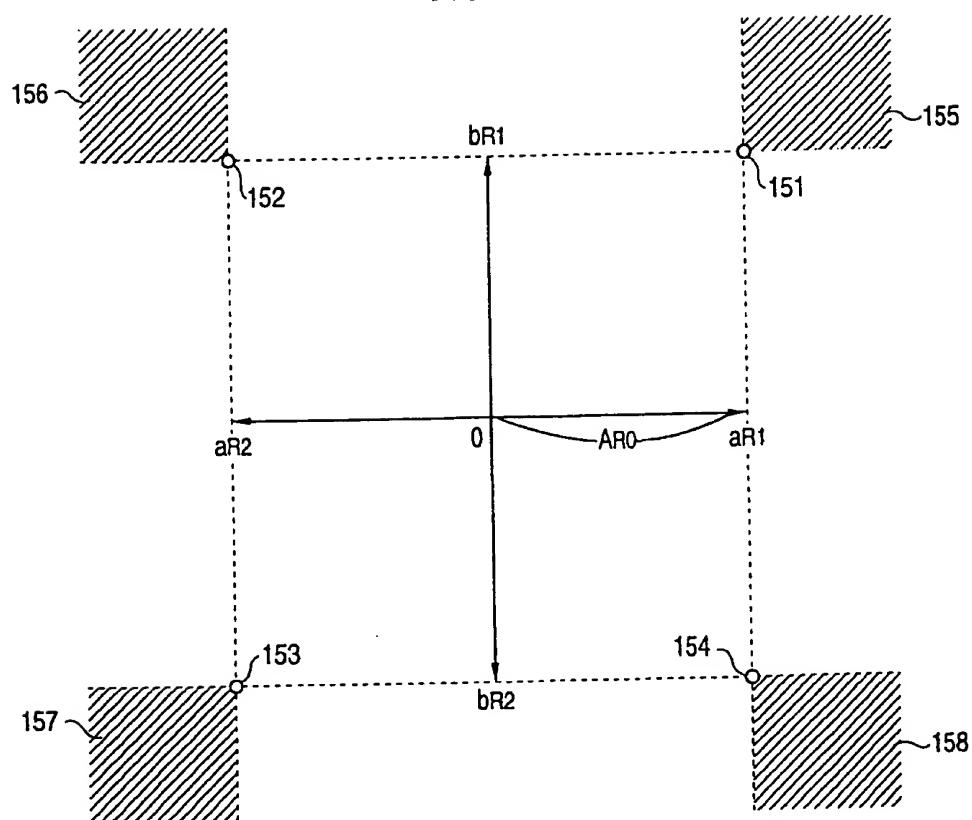
FIG. 19

FIG. 20

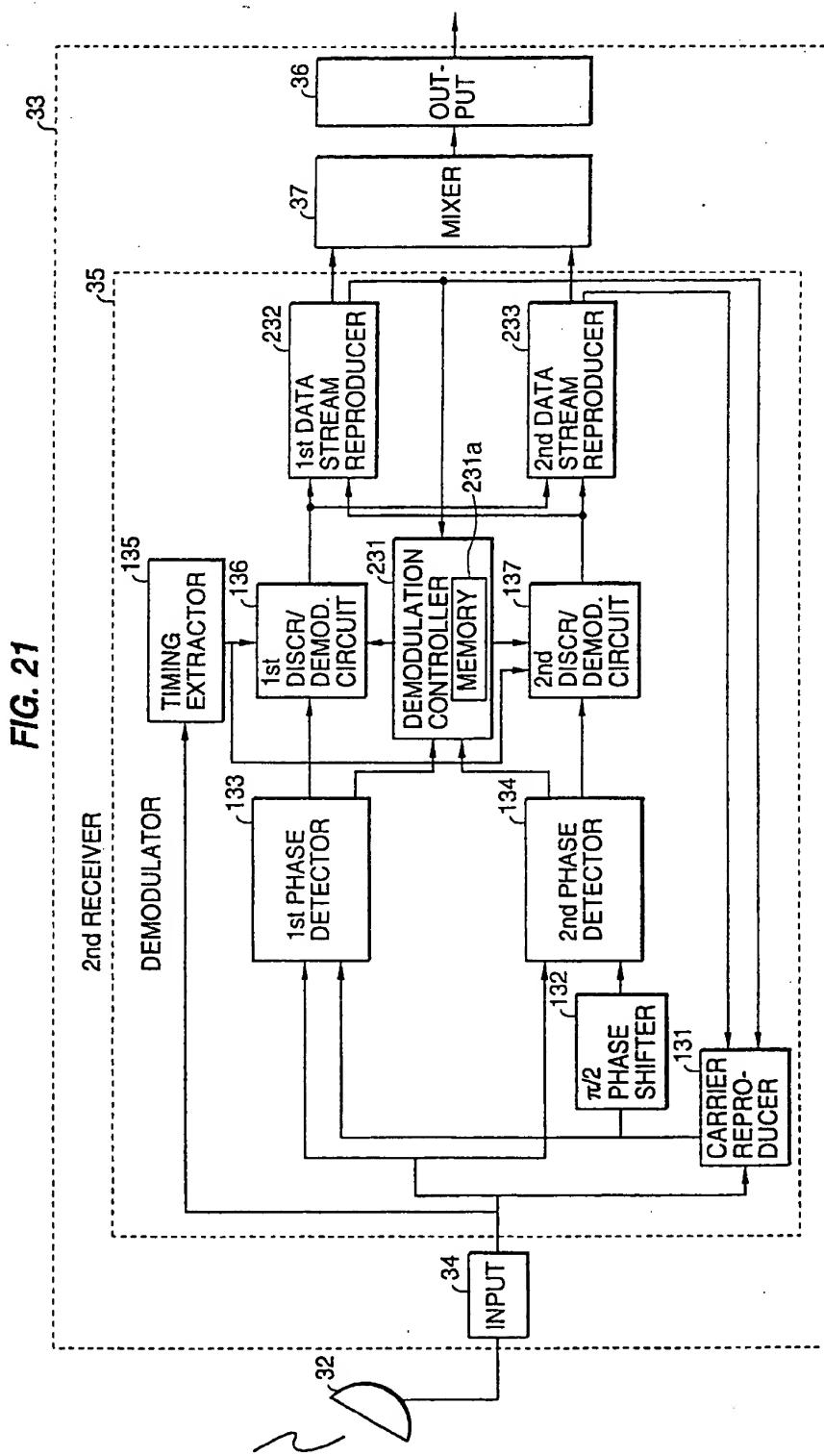
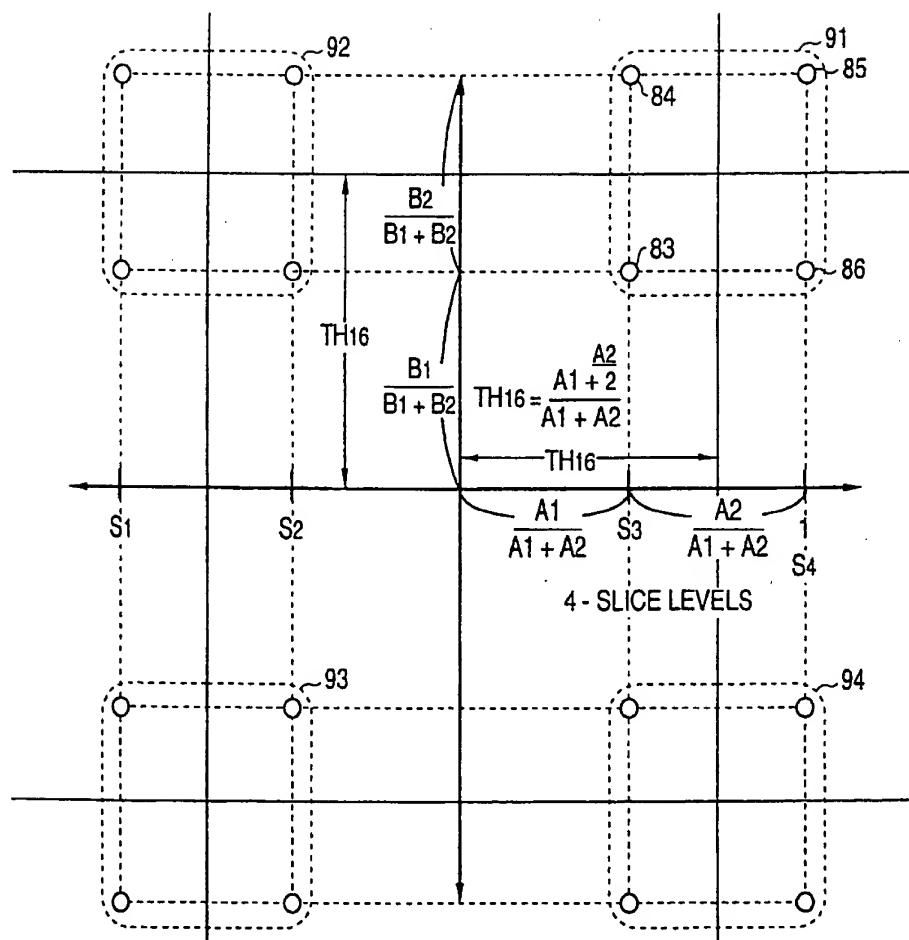


FIG. 22



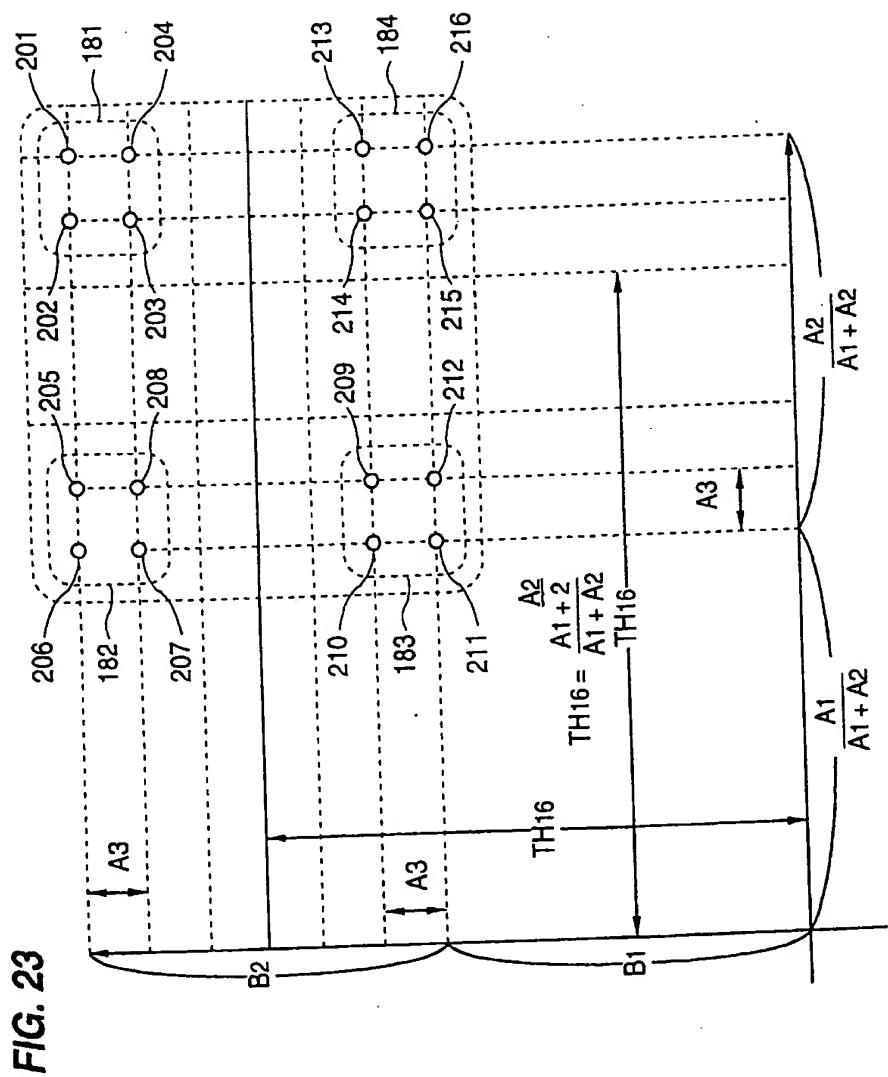


FIG. 24

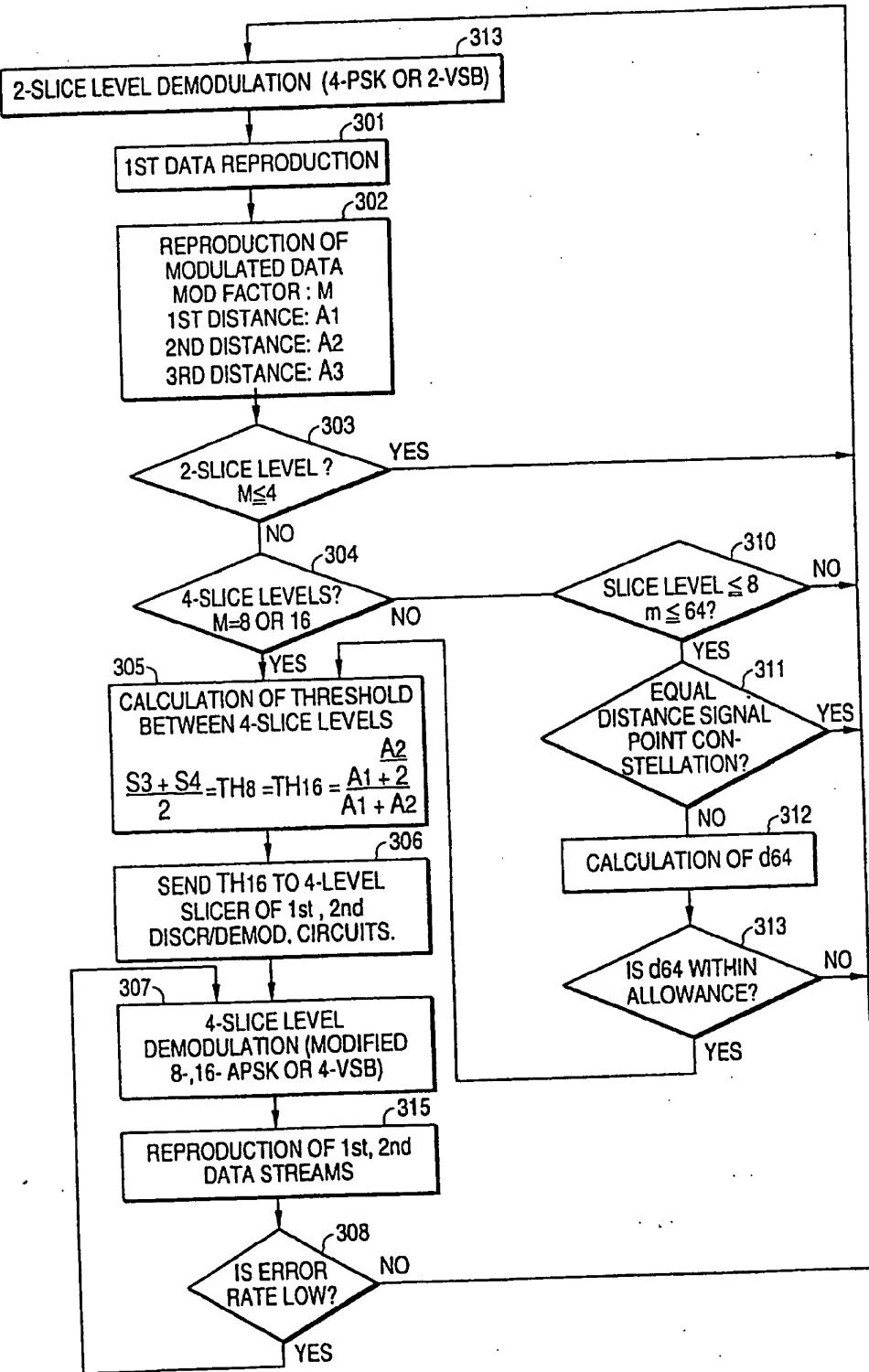


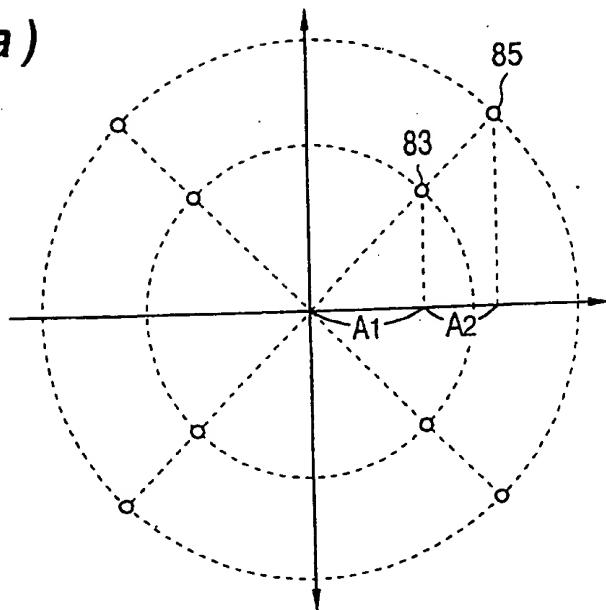
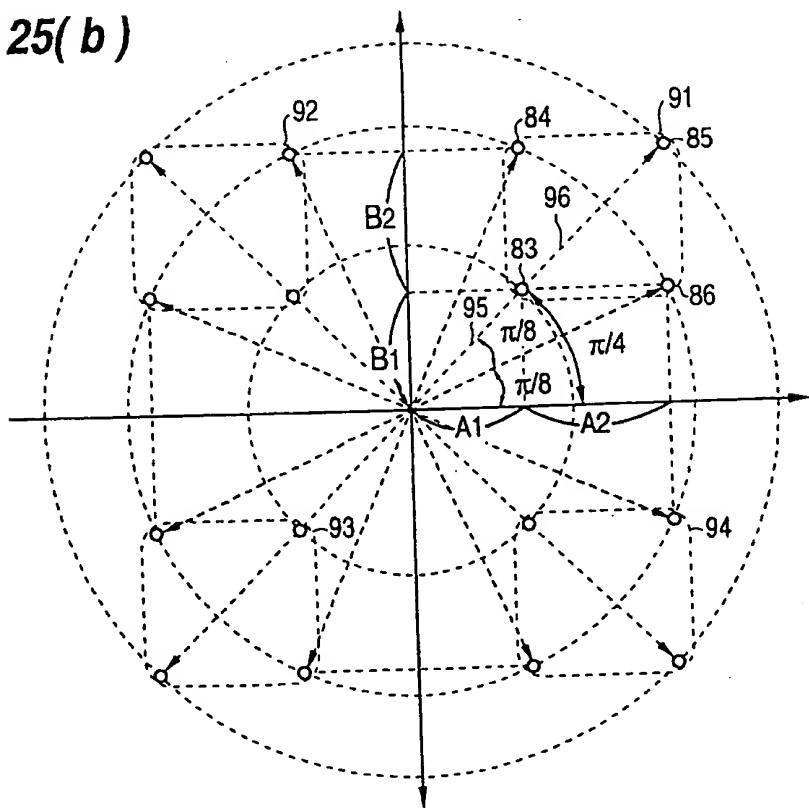
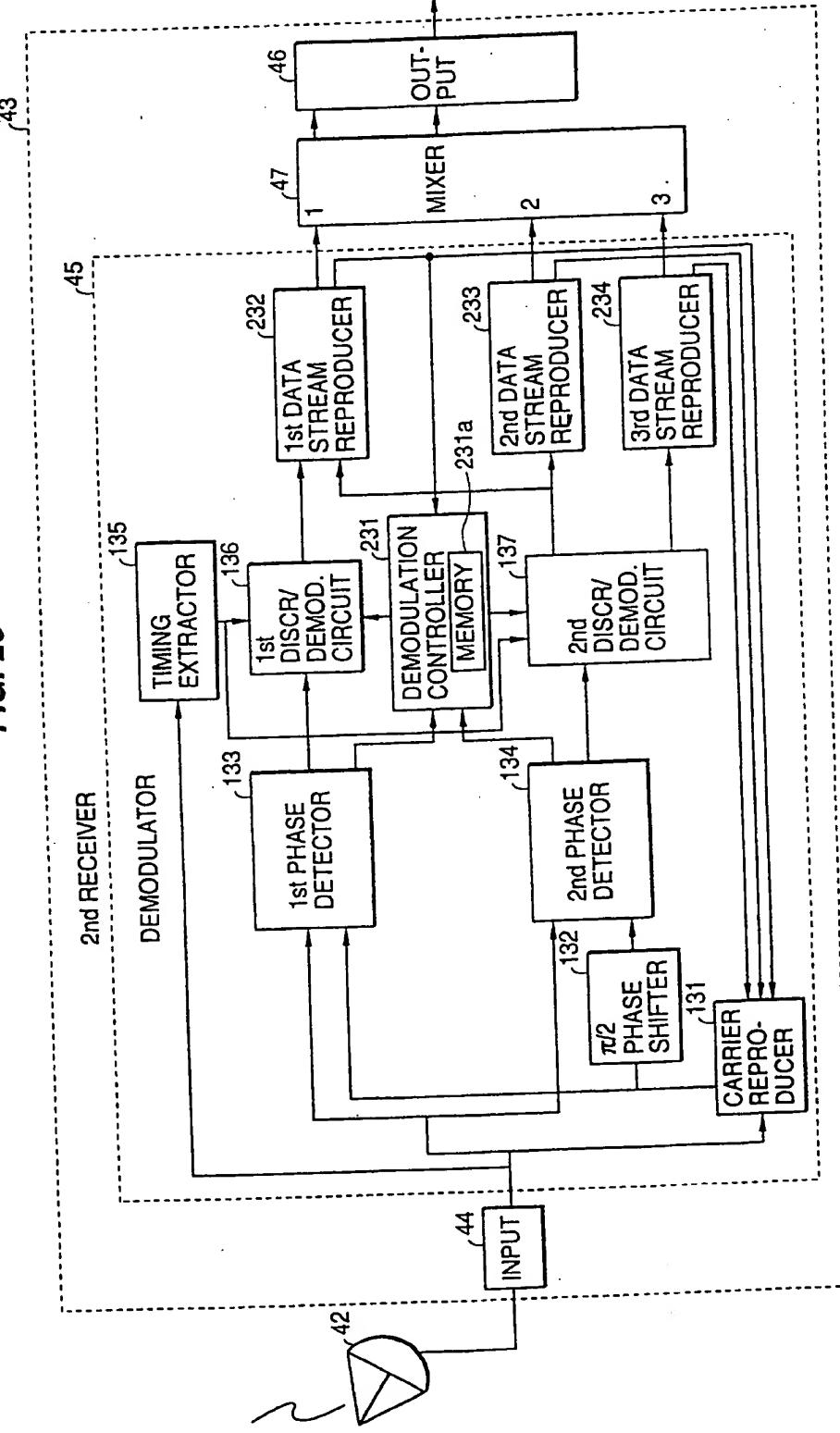
FIG. 25(a)**FIG. 25(b)**

FIG. 26



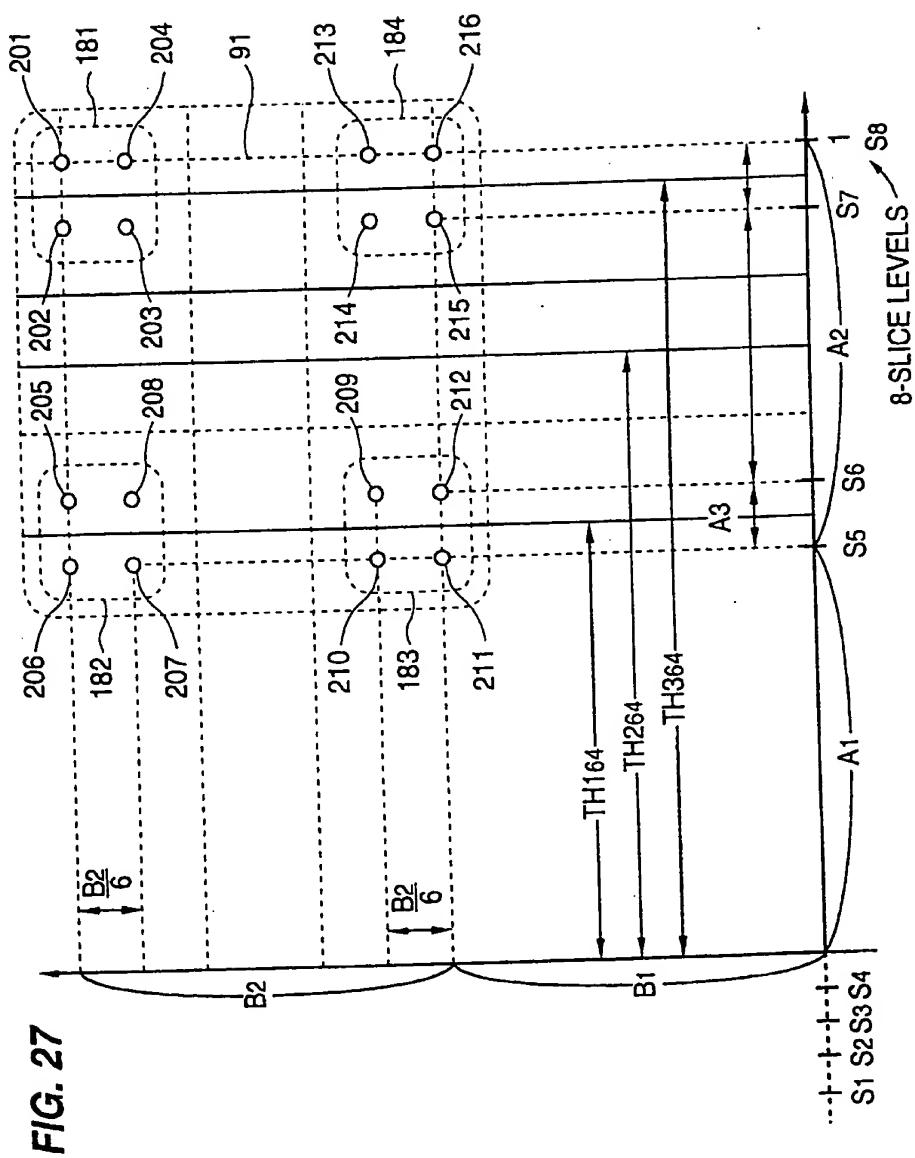


FIG. 28

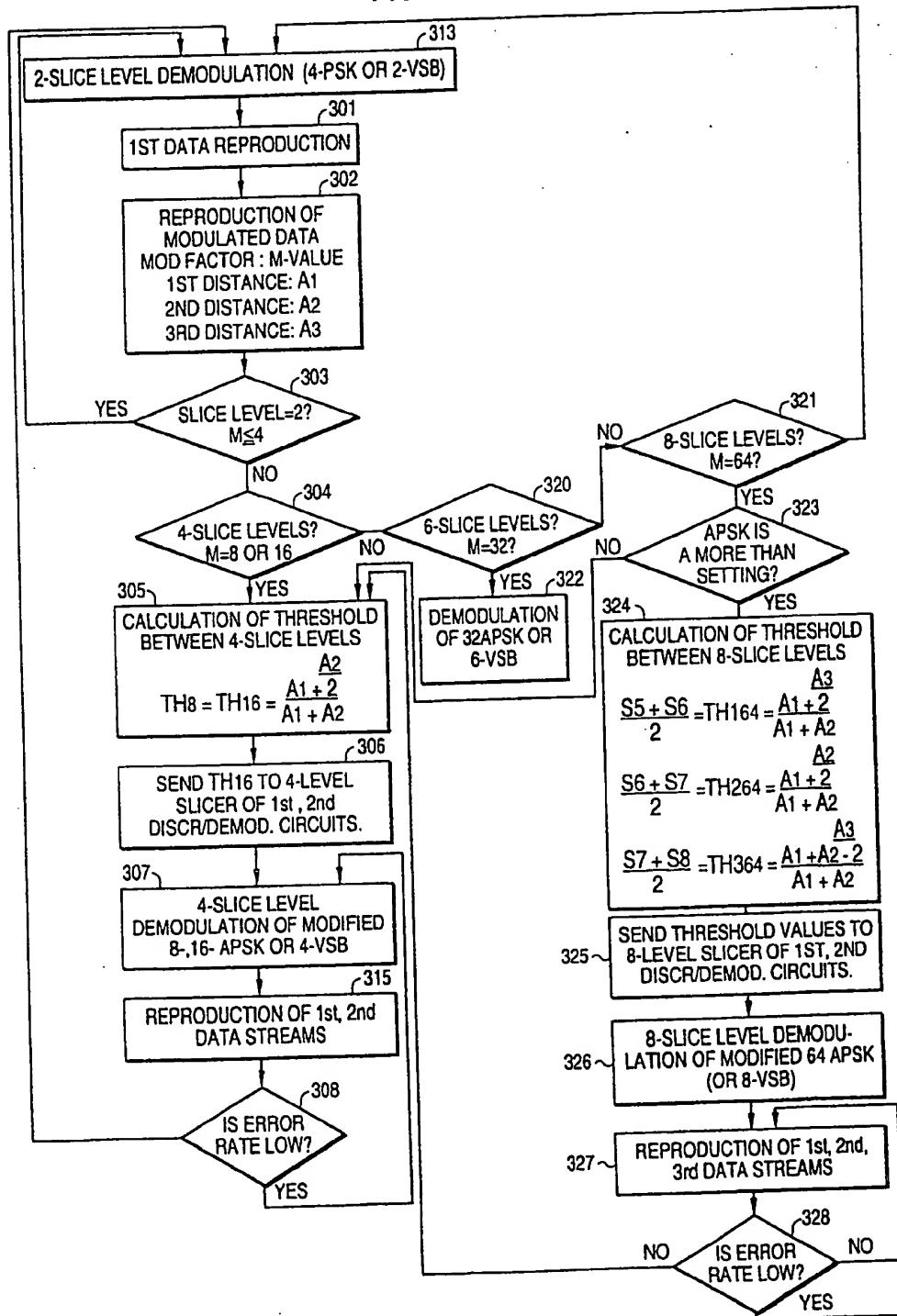


FIG. 29

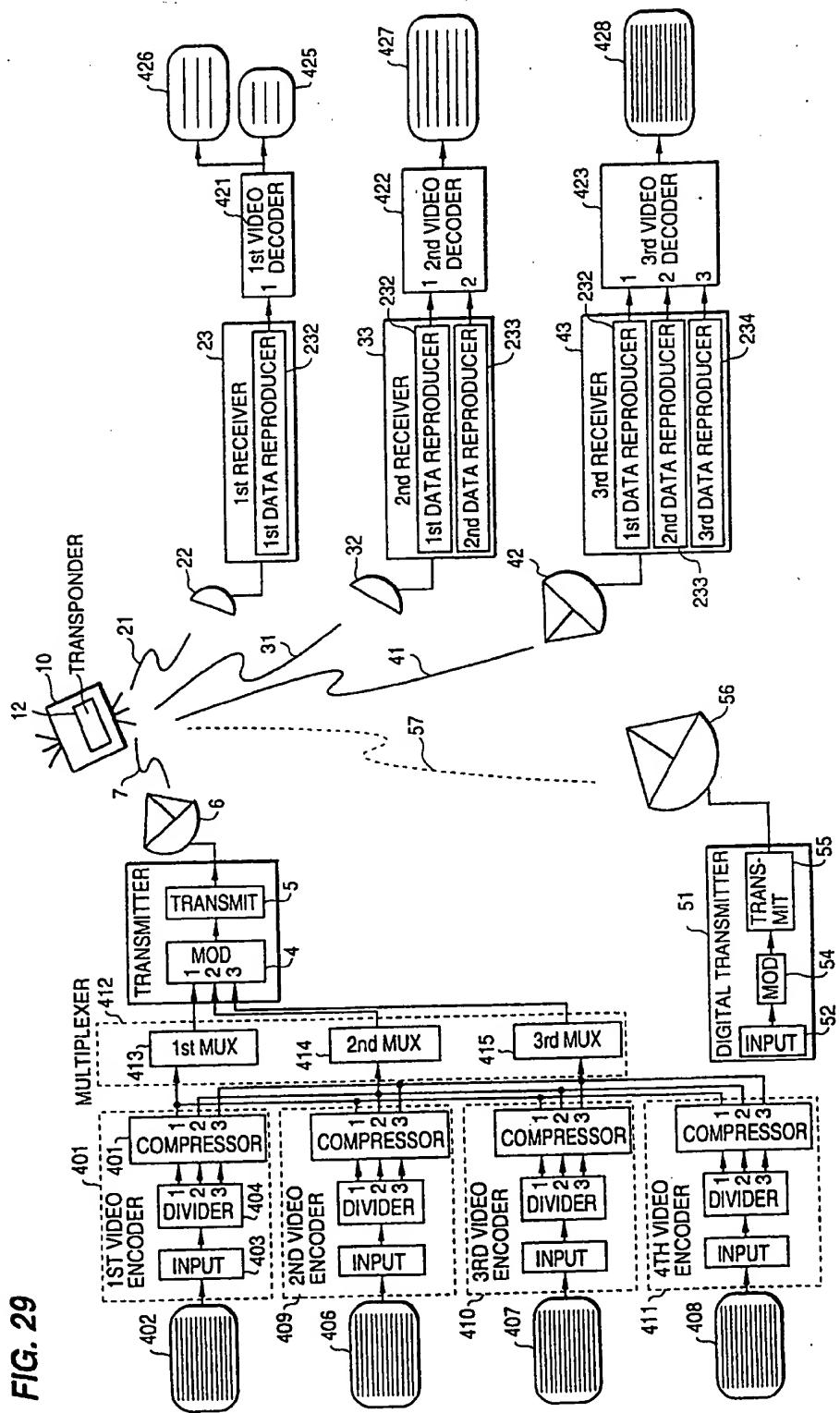
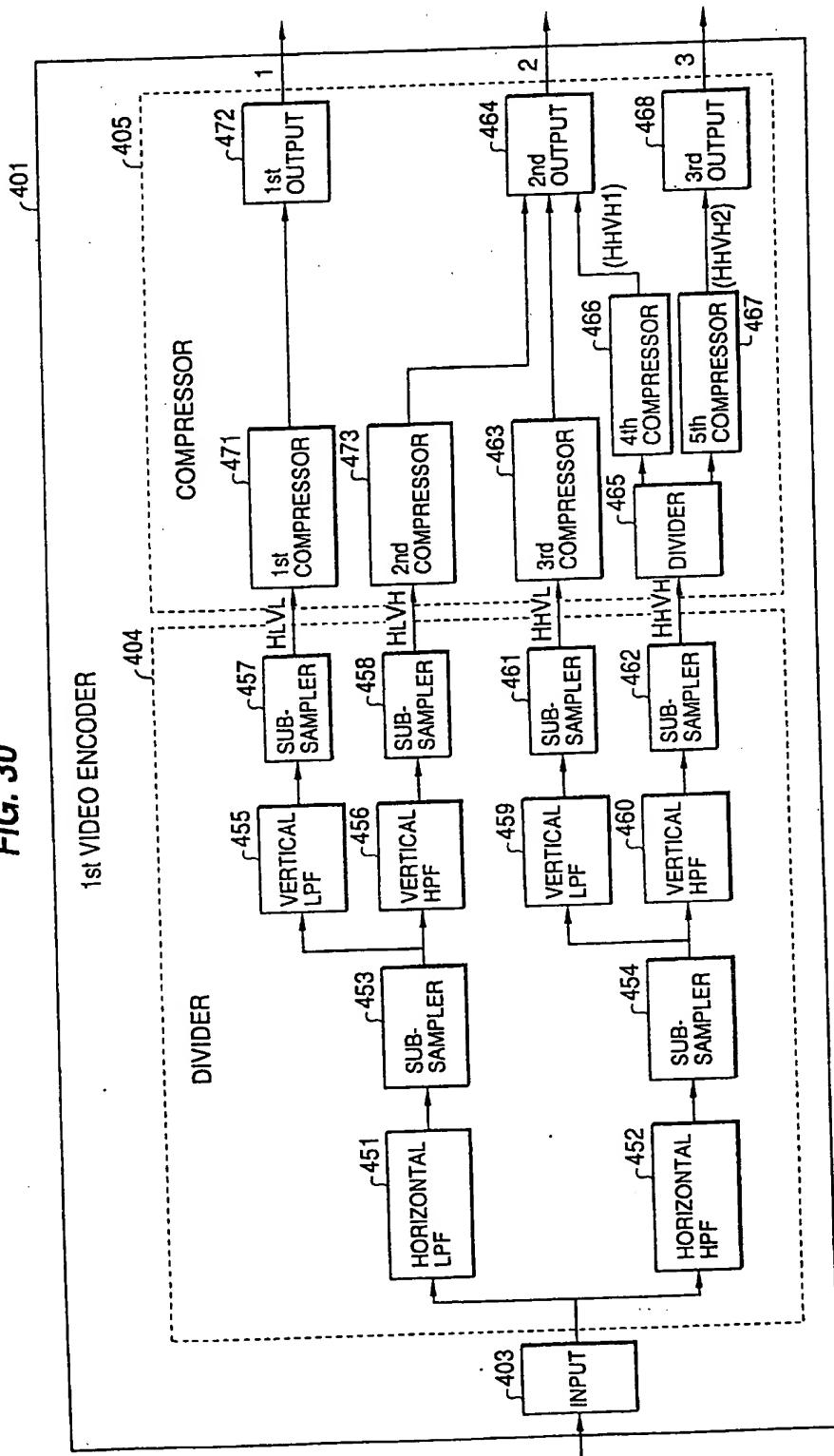


FIG. 30

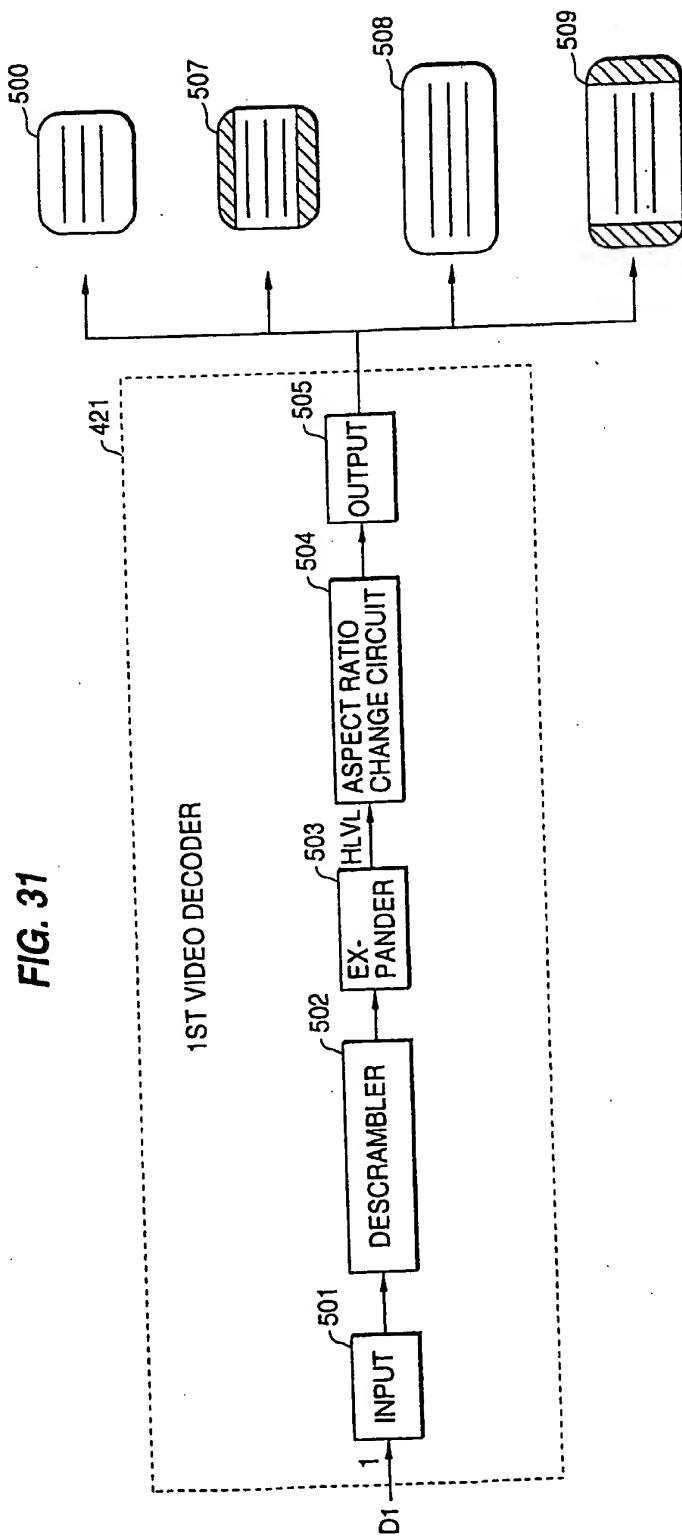


FIG. 32

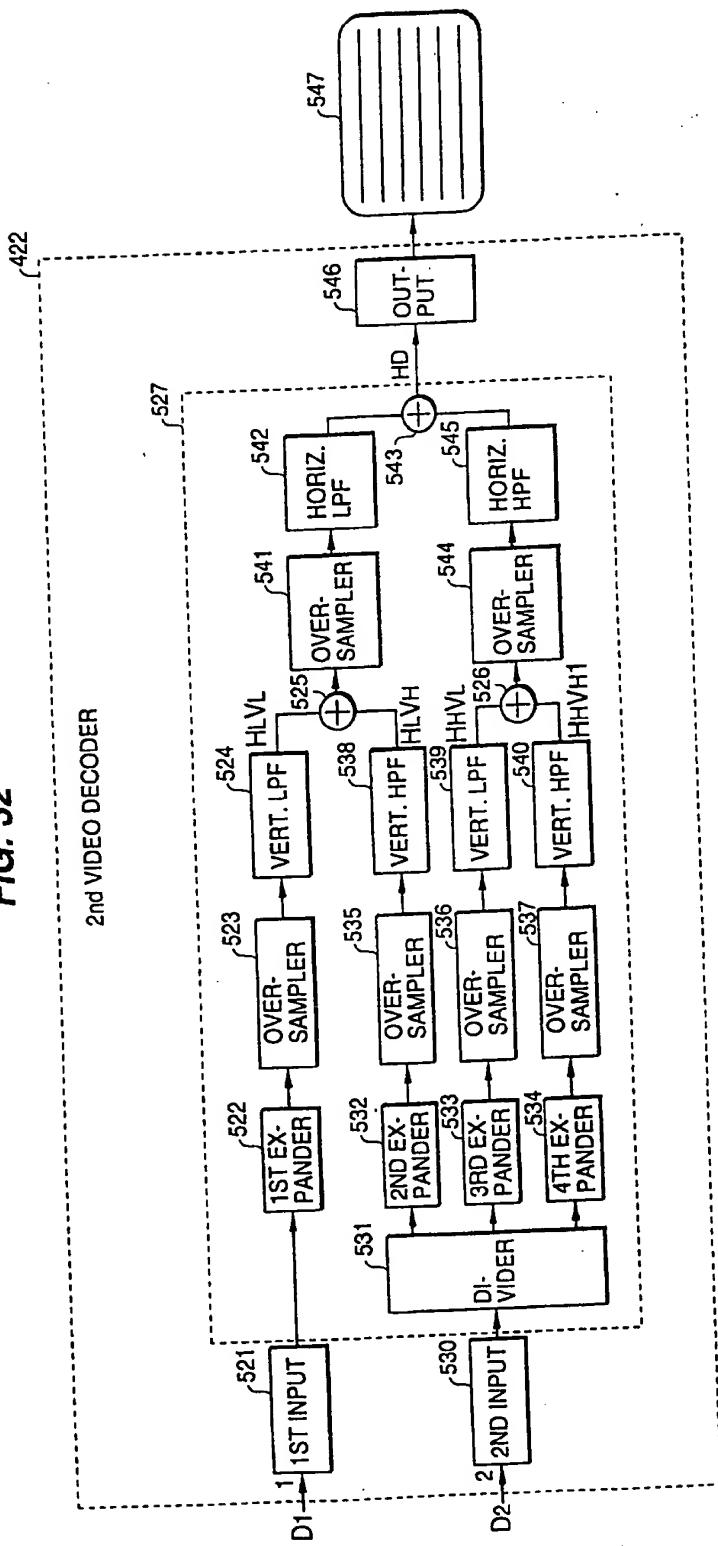


FIG. 33

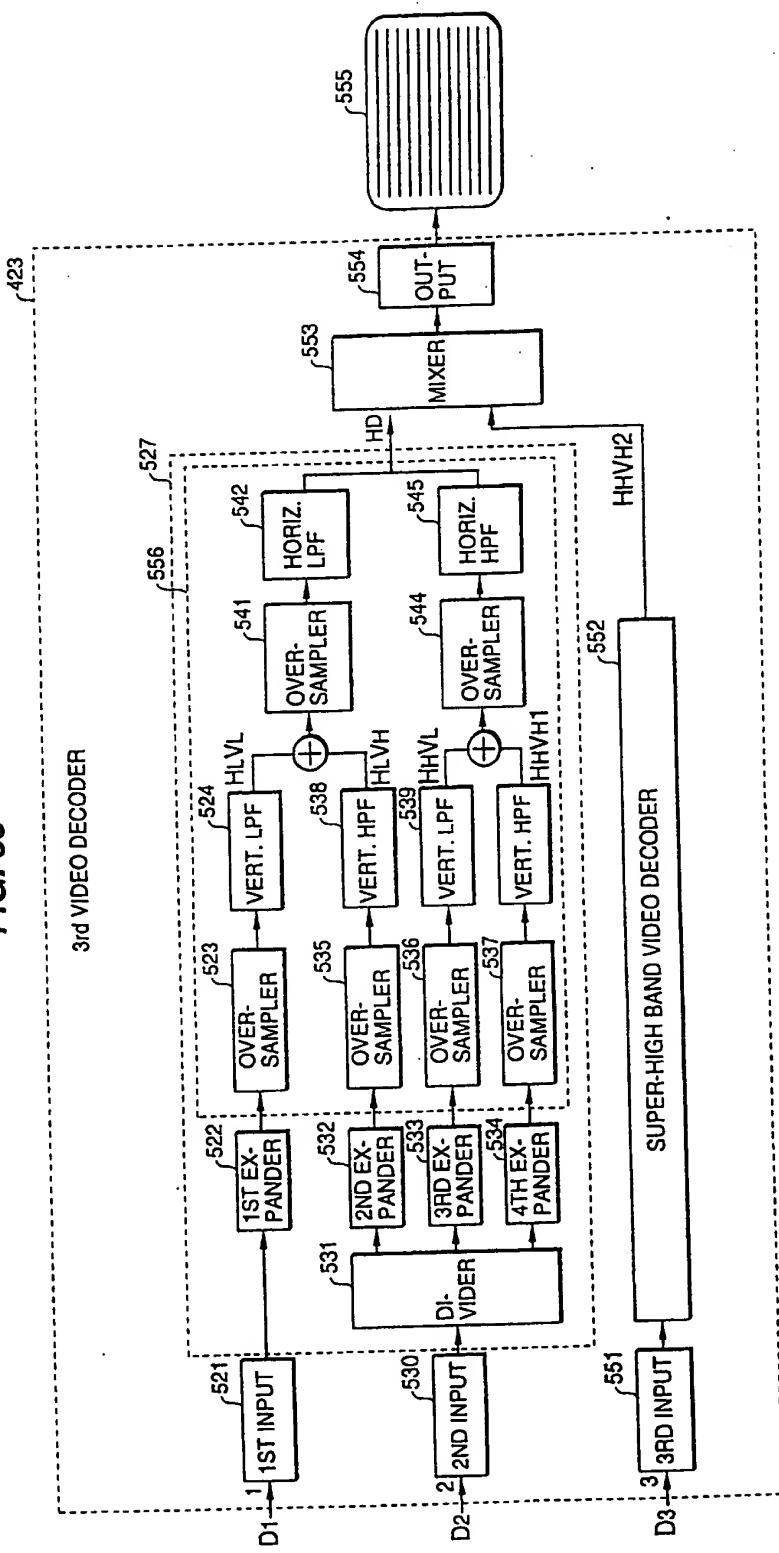


FIG. 34

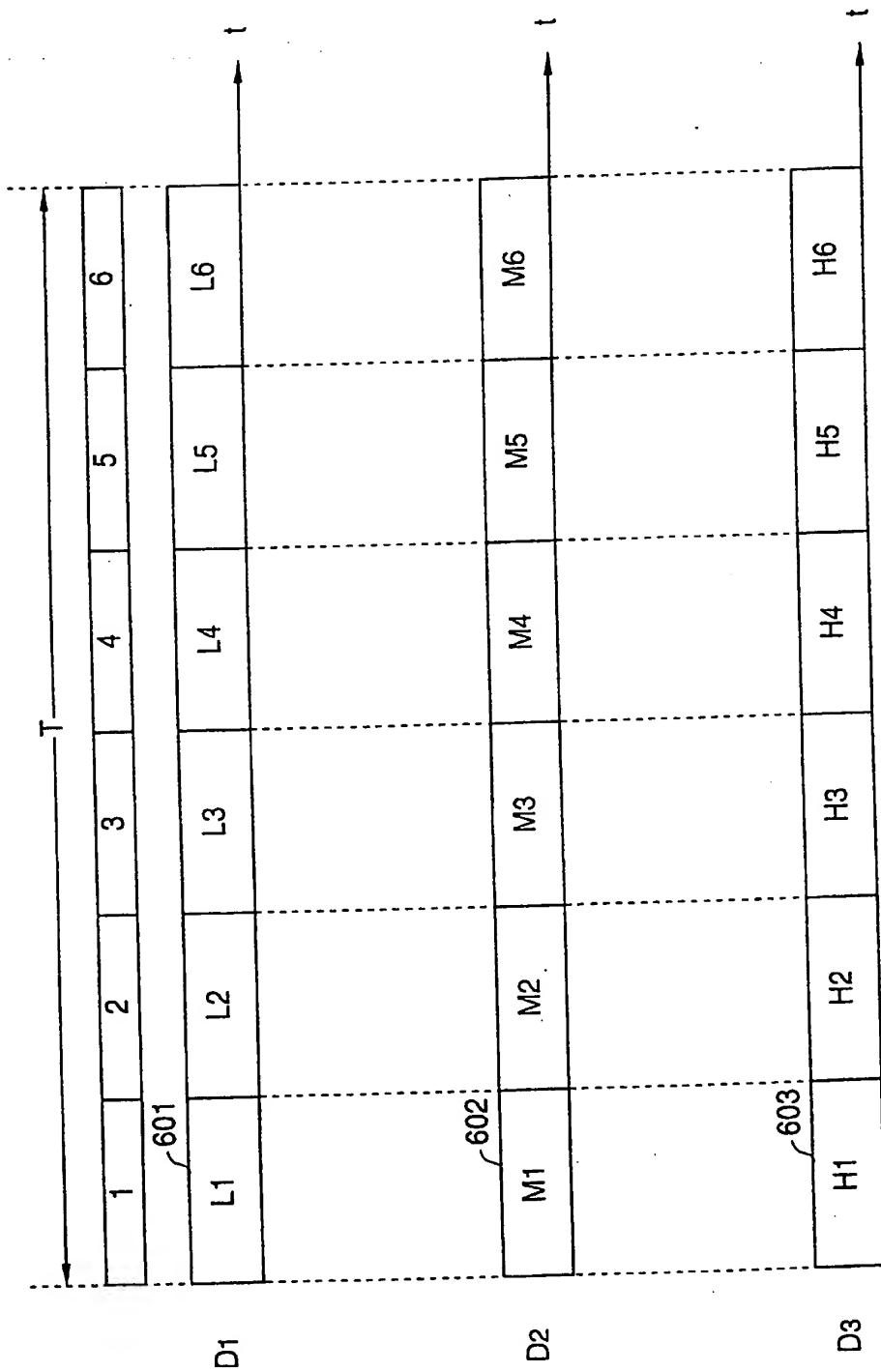


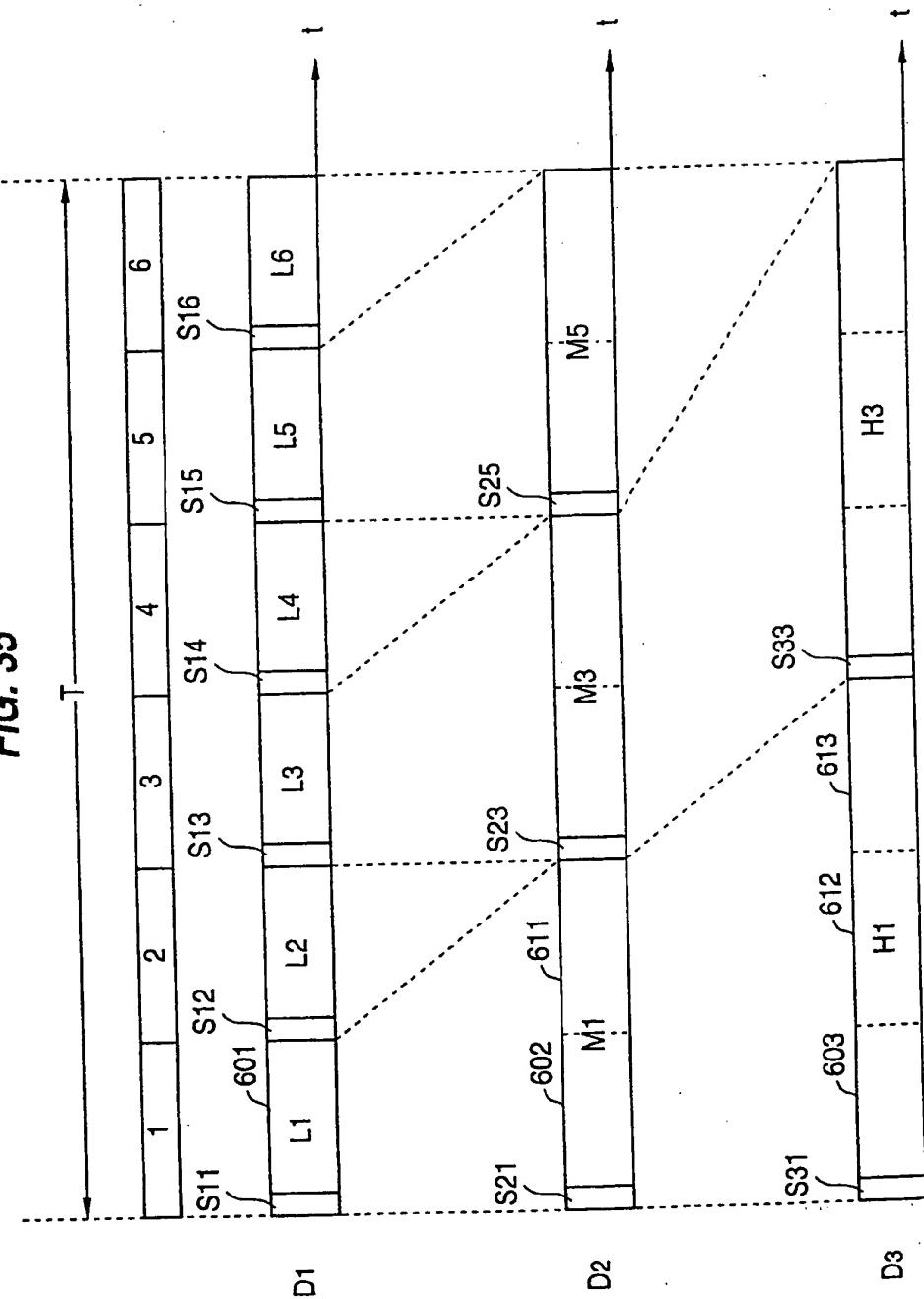
FIG. 35

FIG. 36

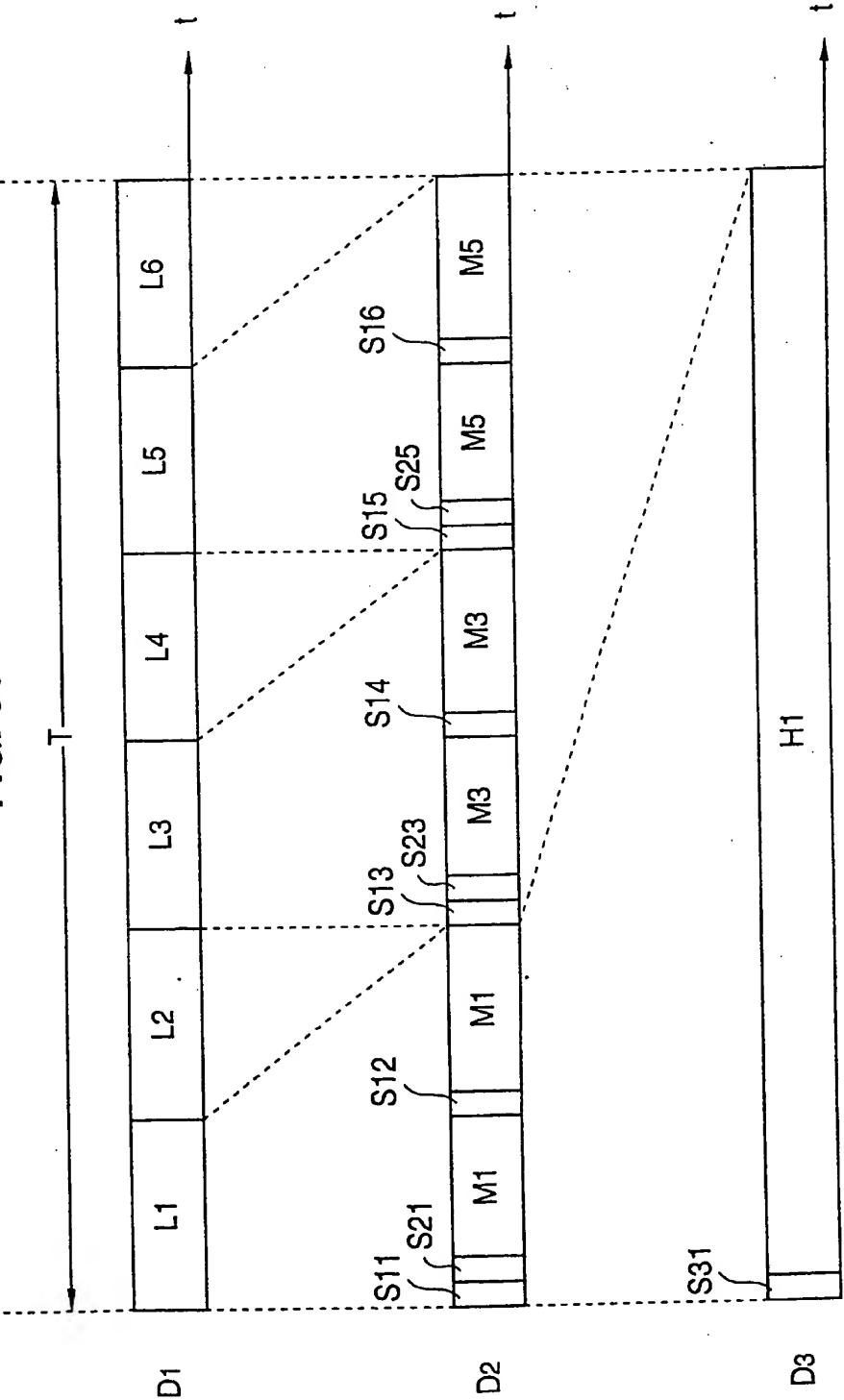


FIG. 37

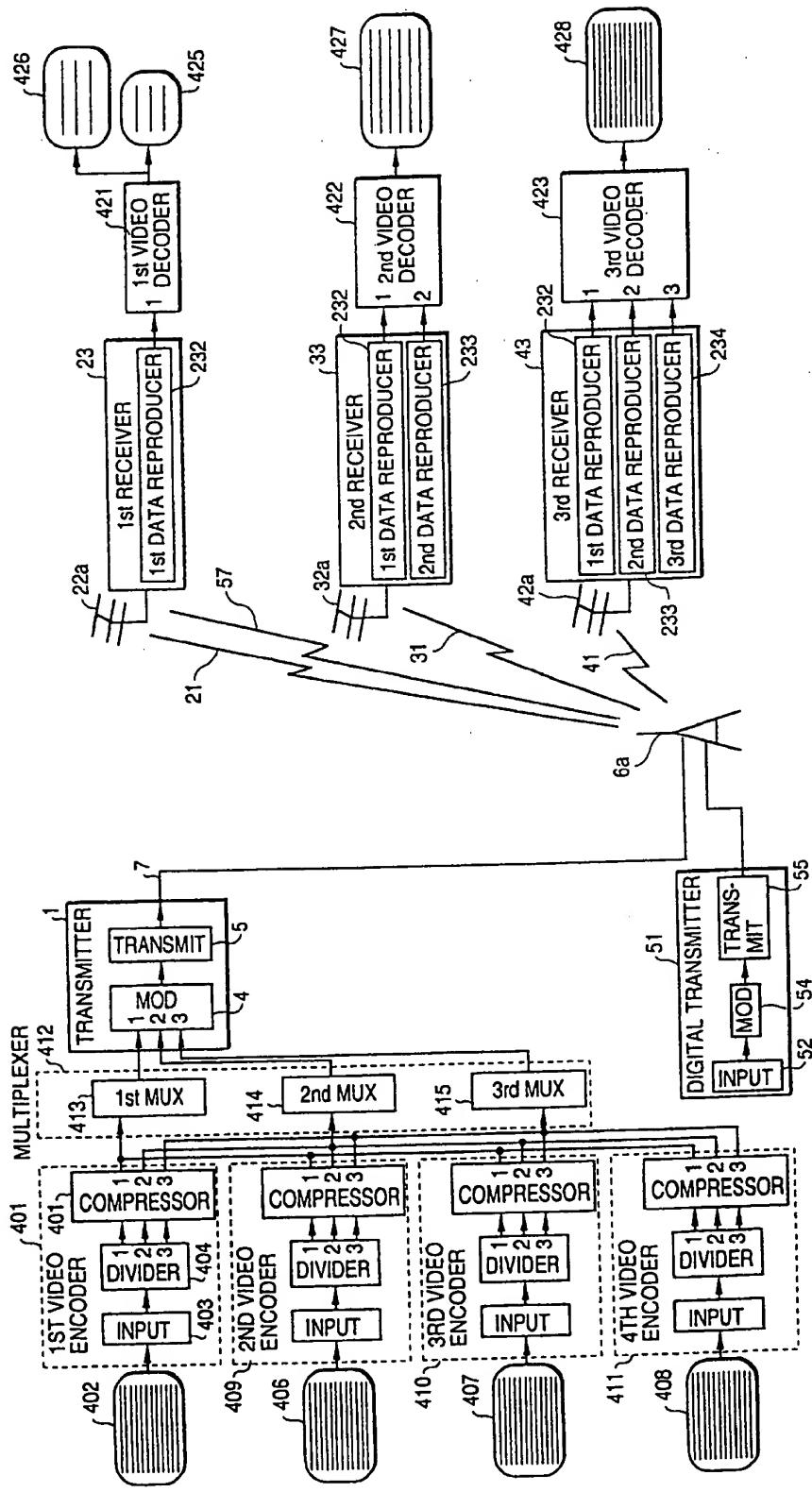


FIG. 38

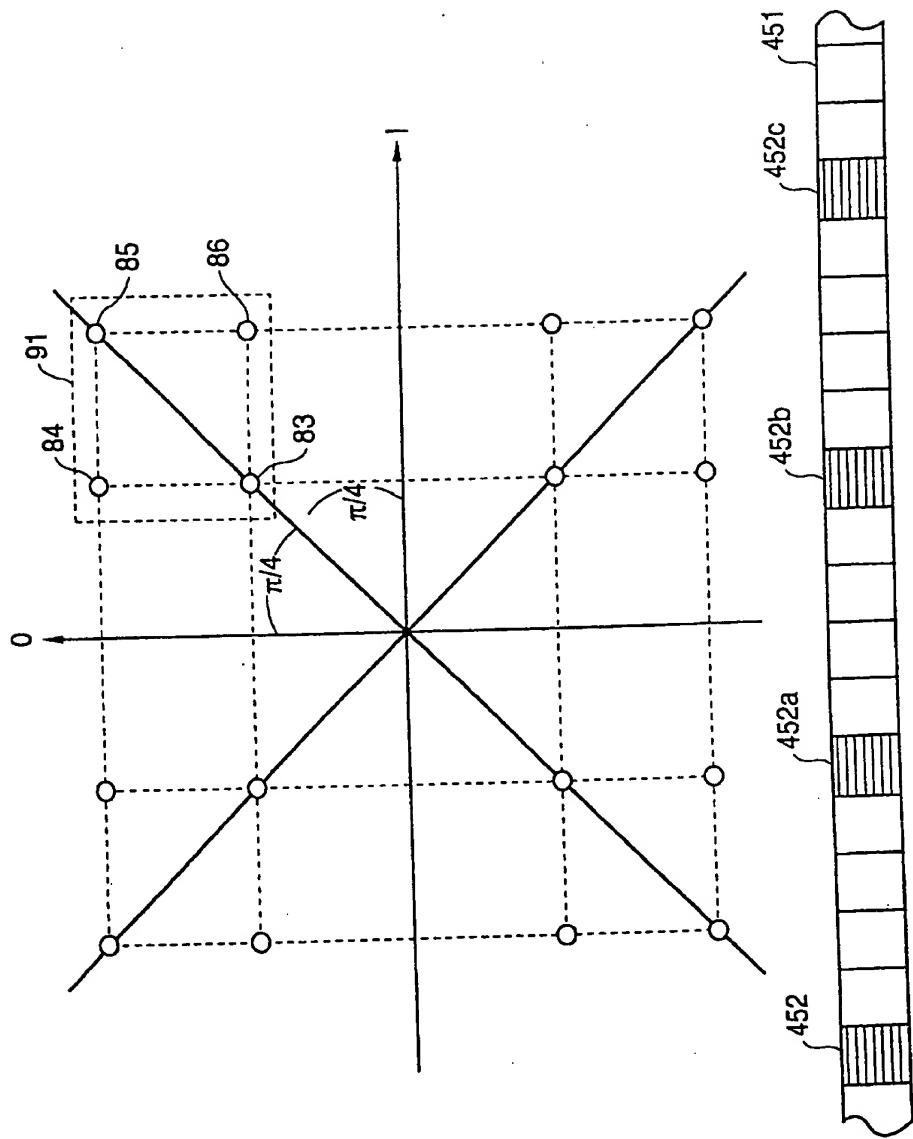


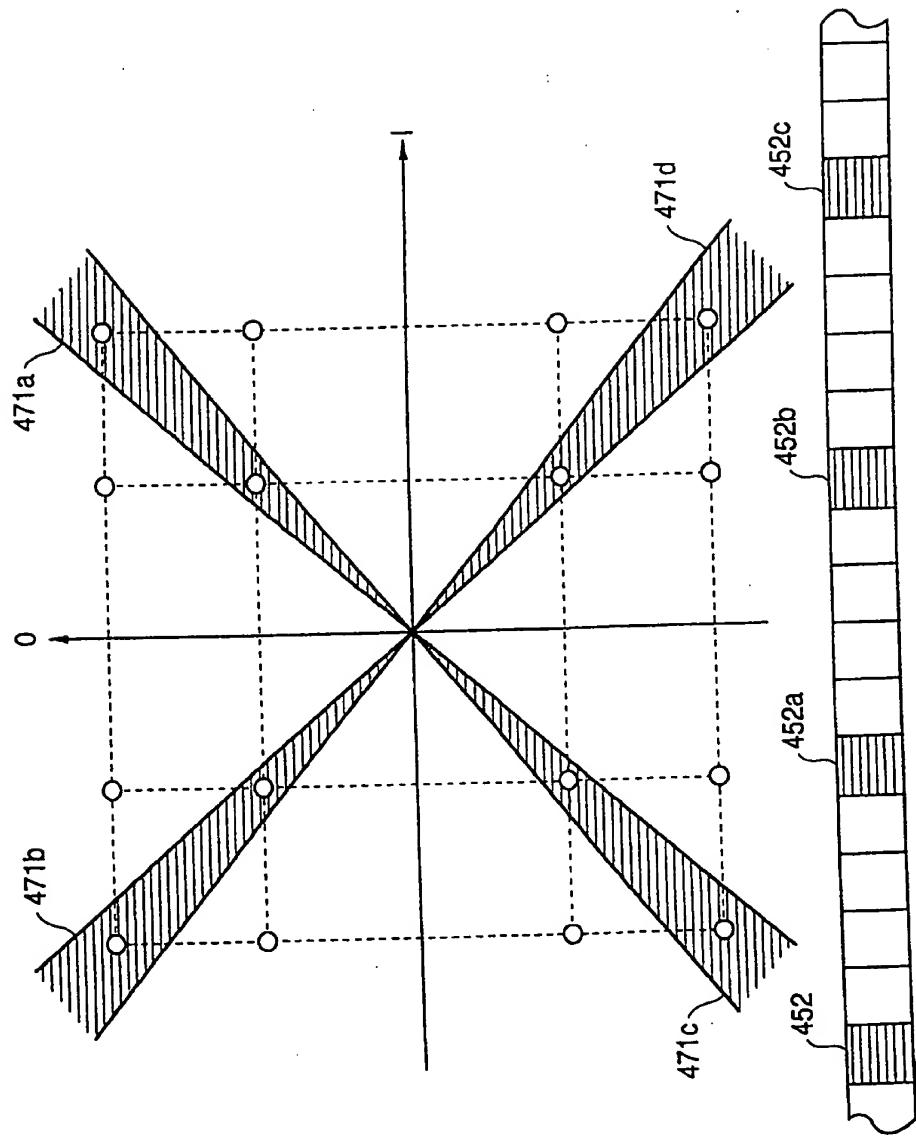
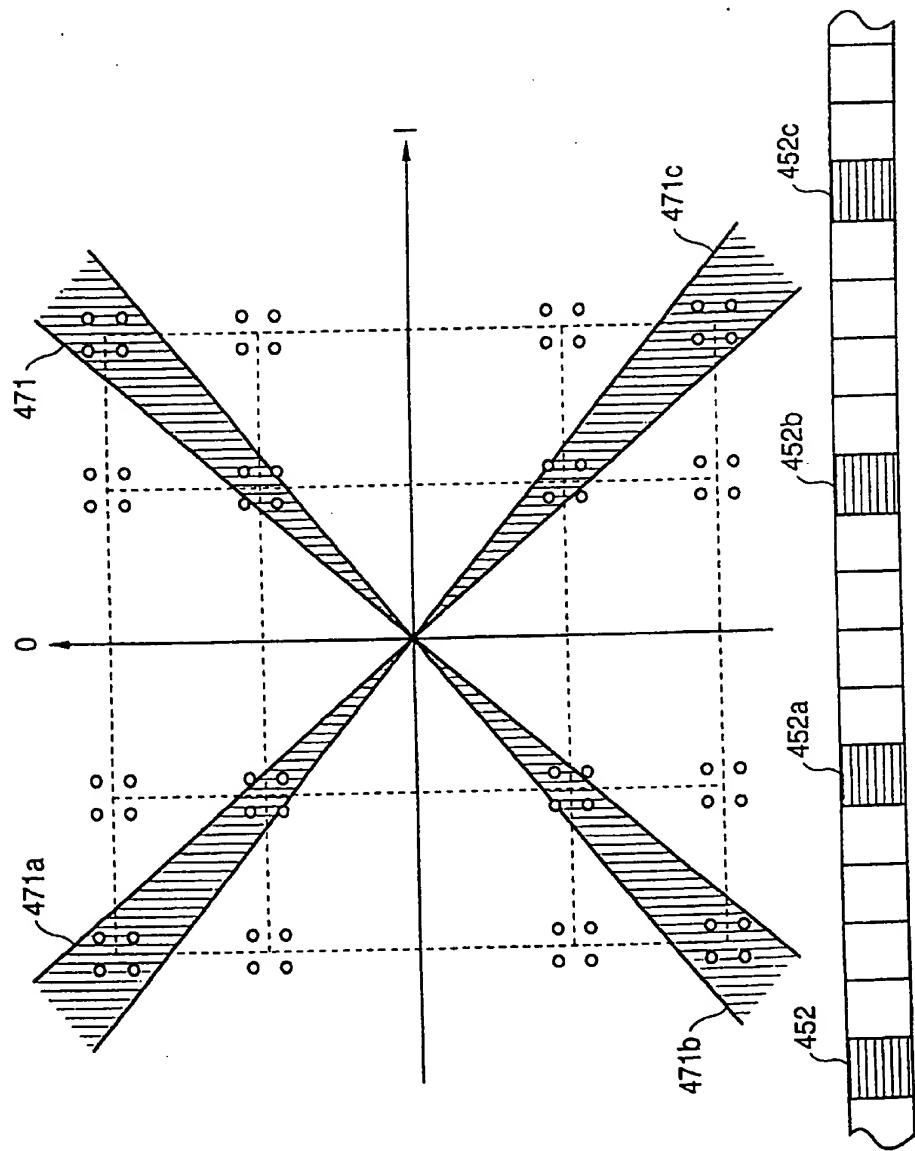
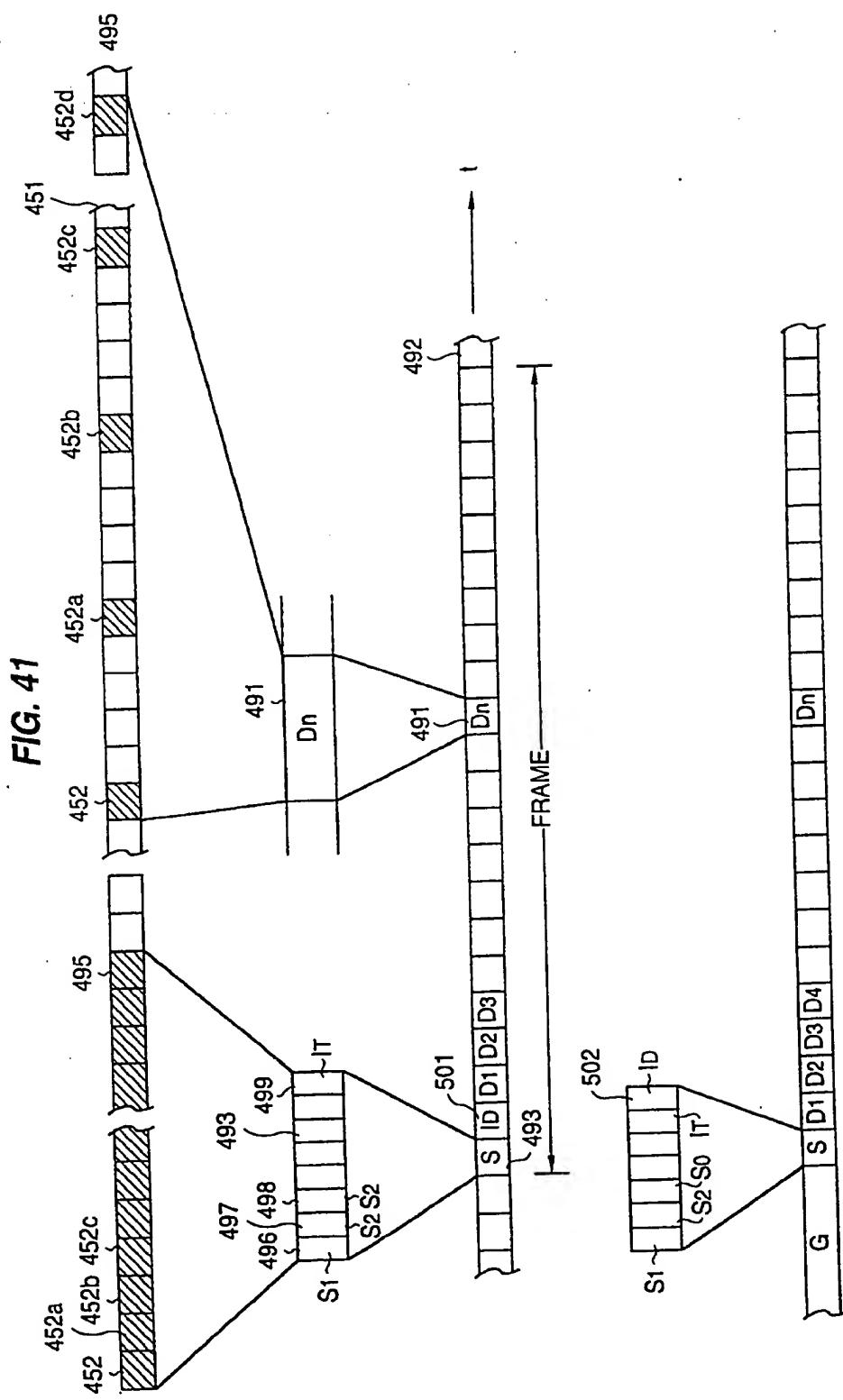
FIG. 39

FIG. 40



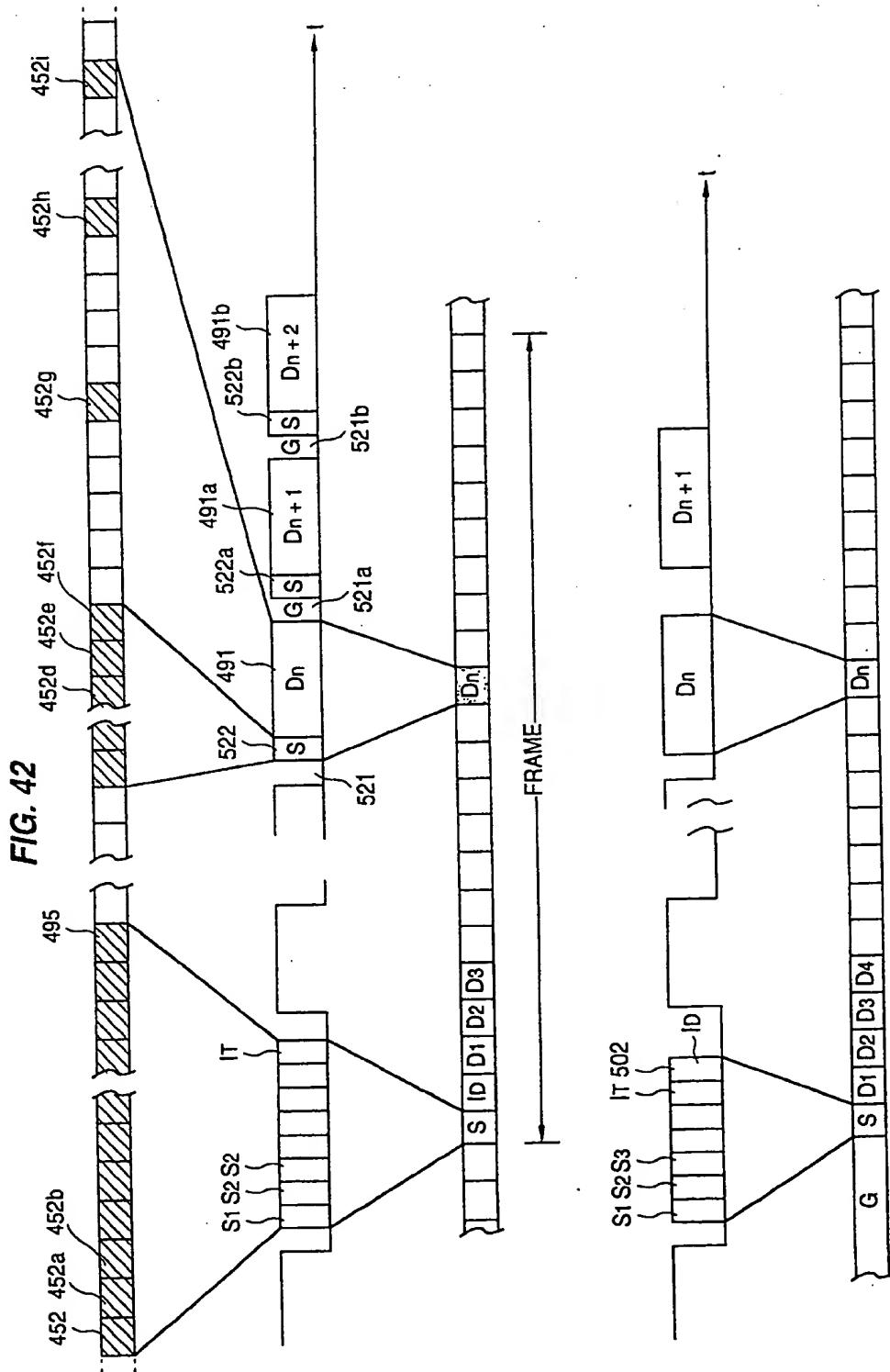
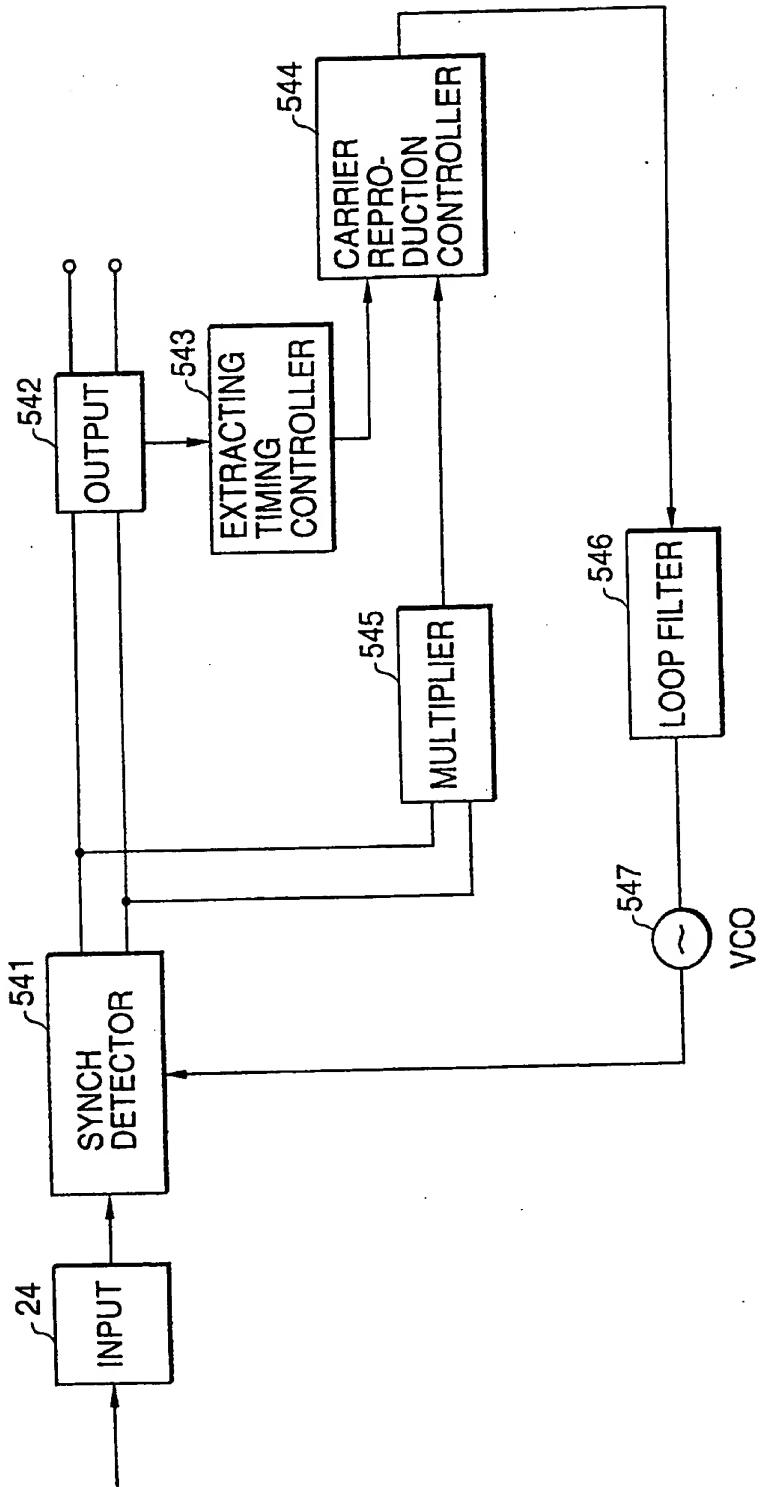


FIG. 43



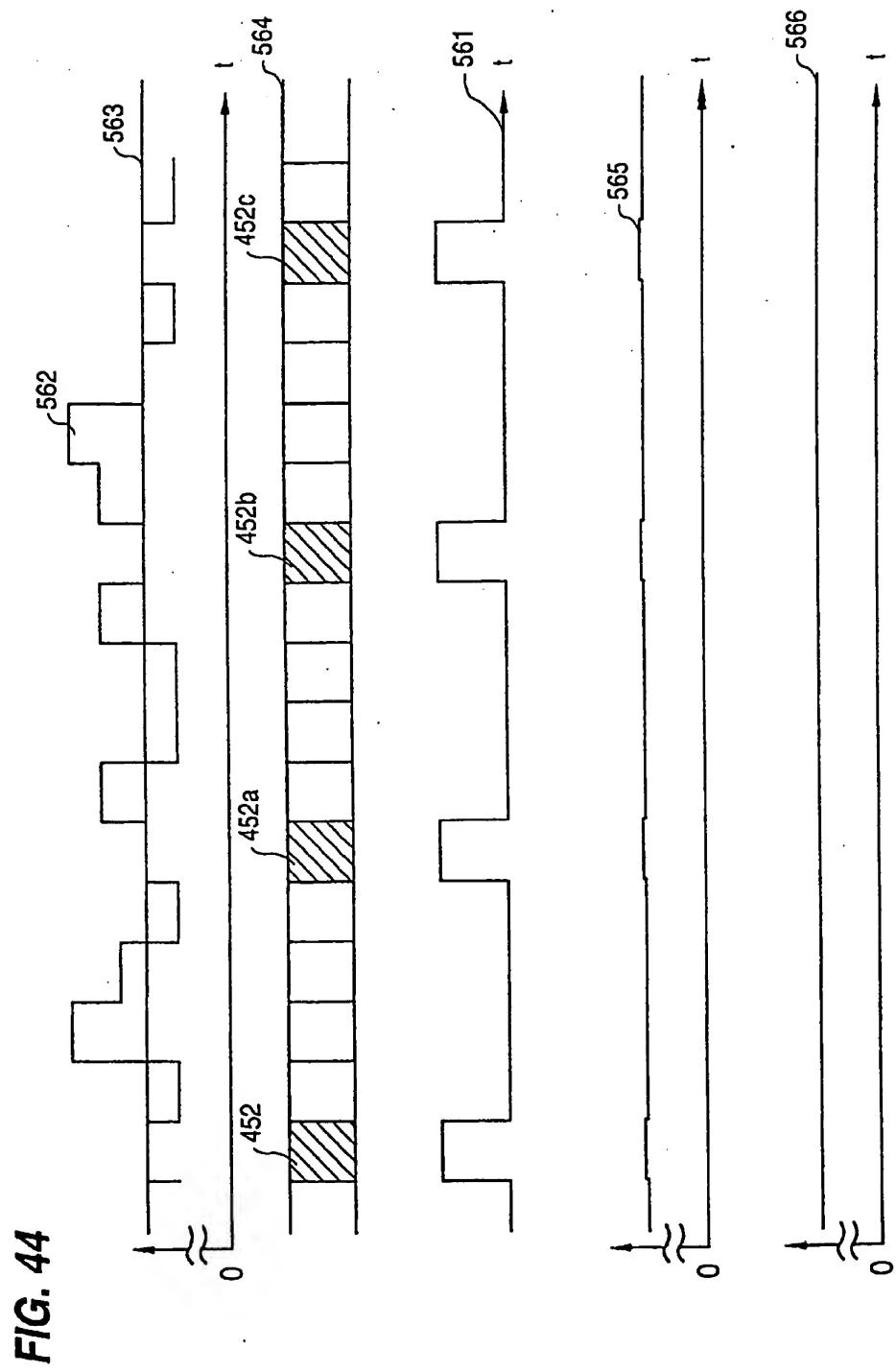


FIG. 44

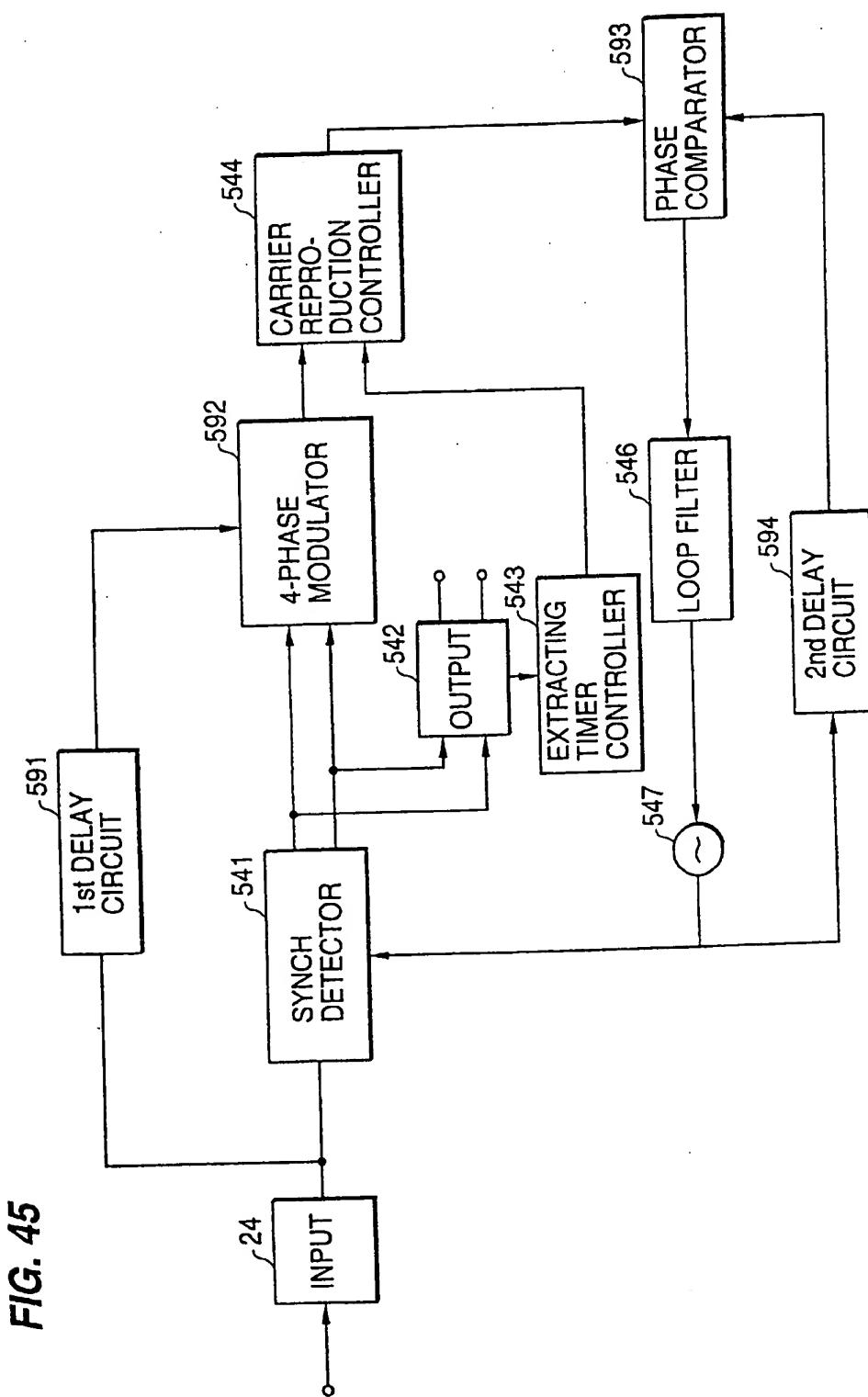
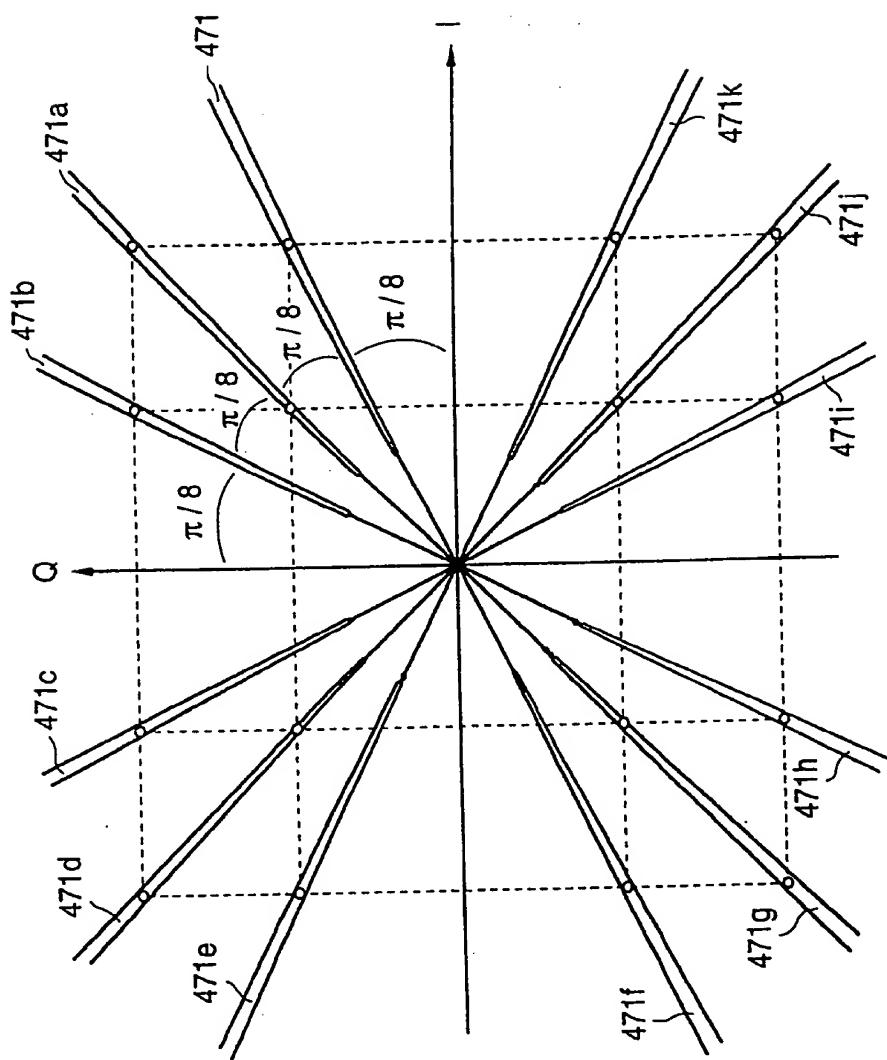


FIG. 46



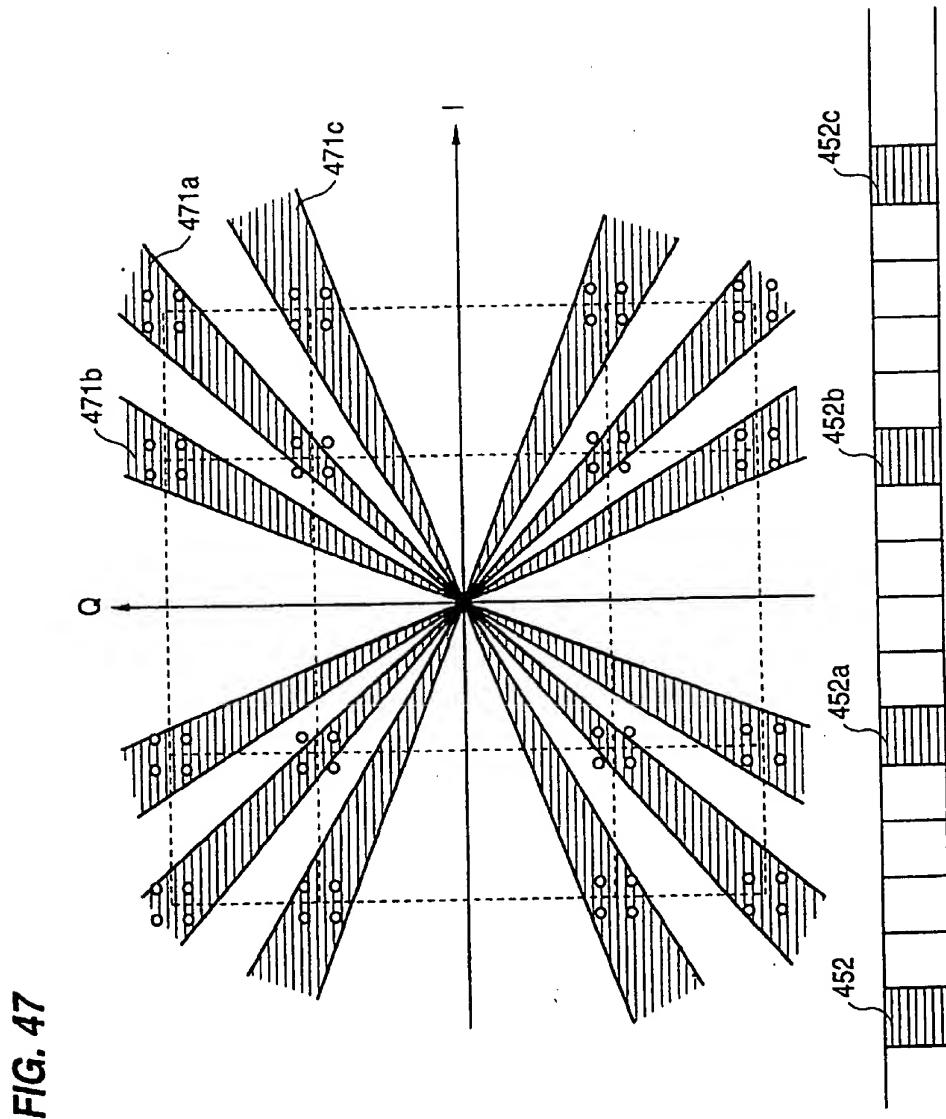


FIG. 48

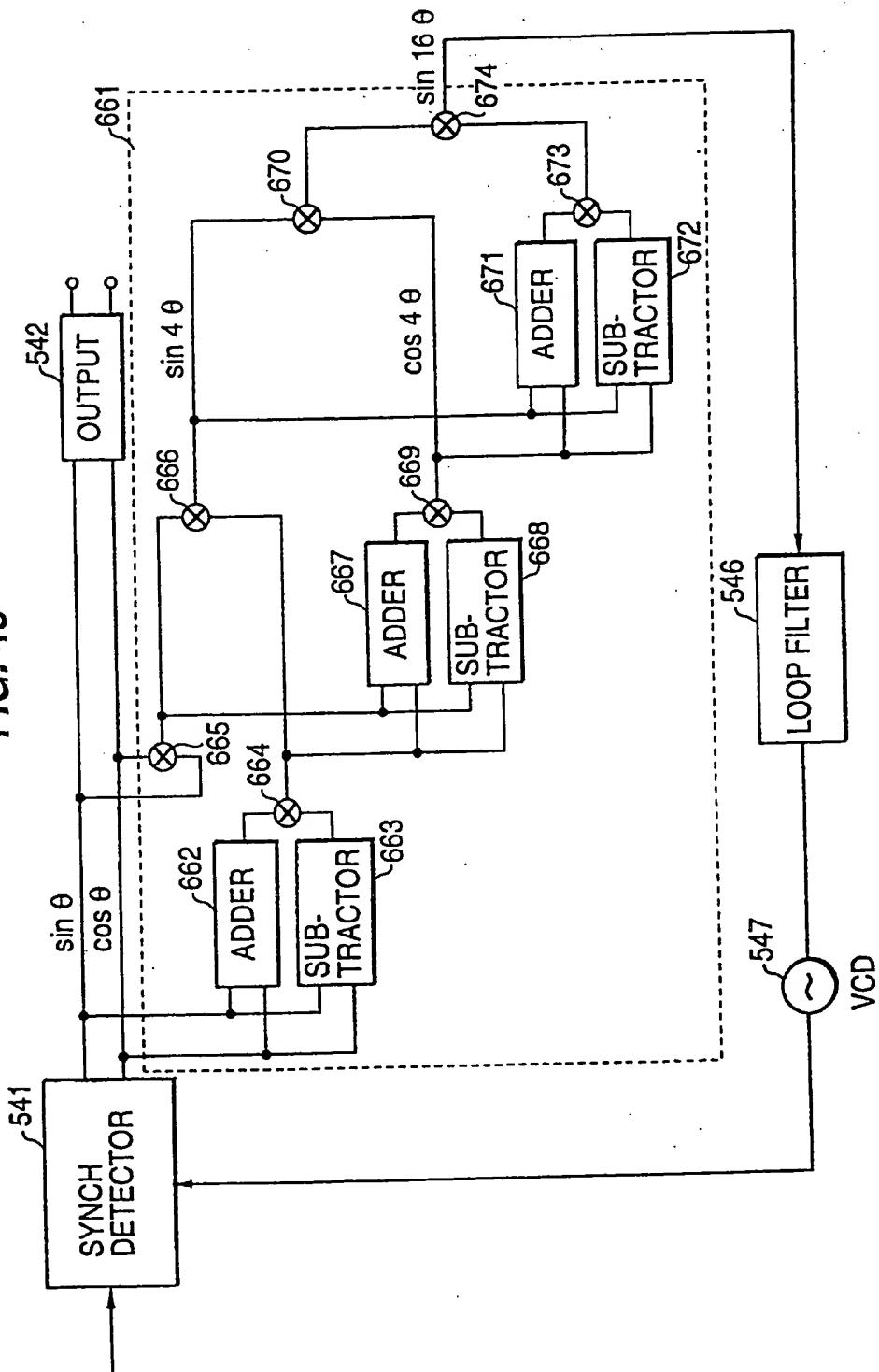


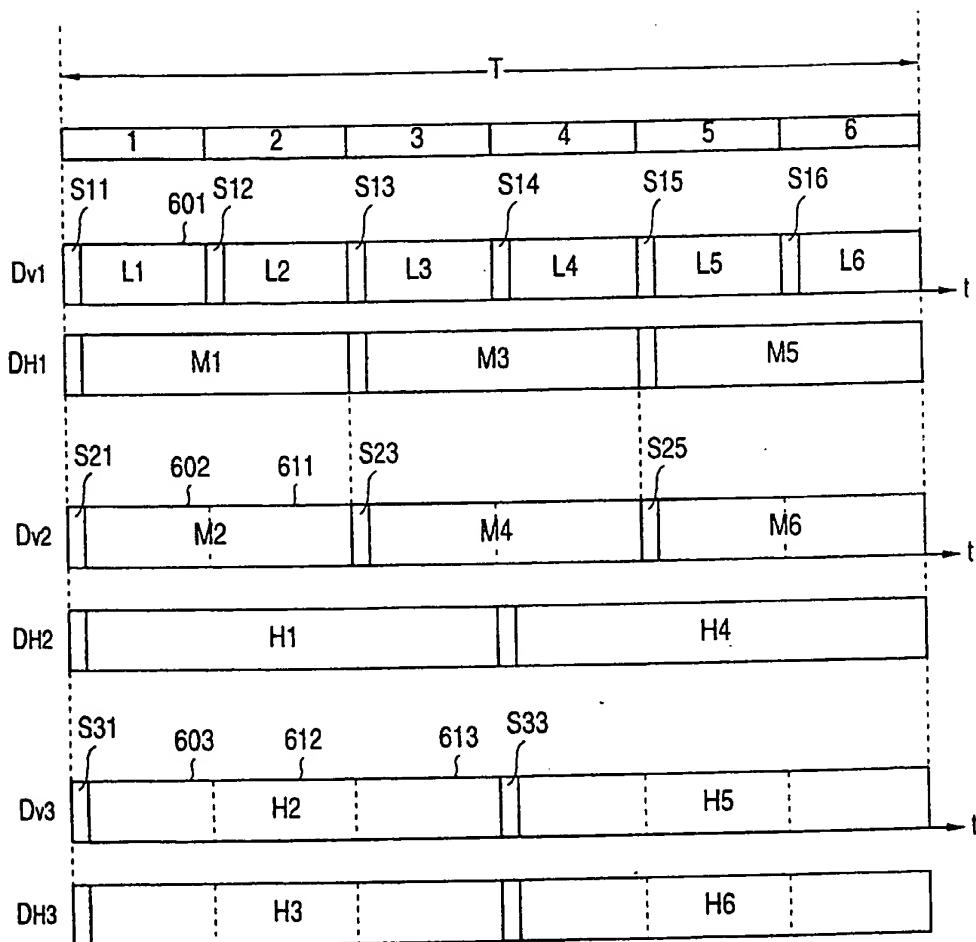
FIG. 49

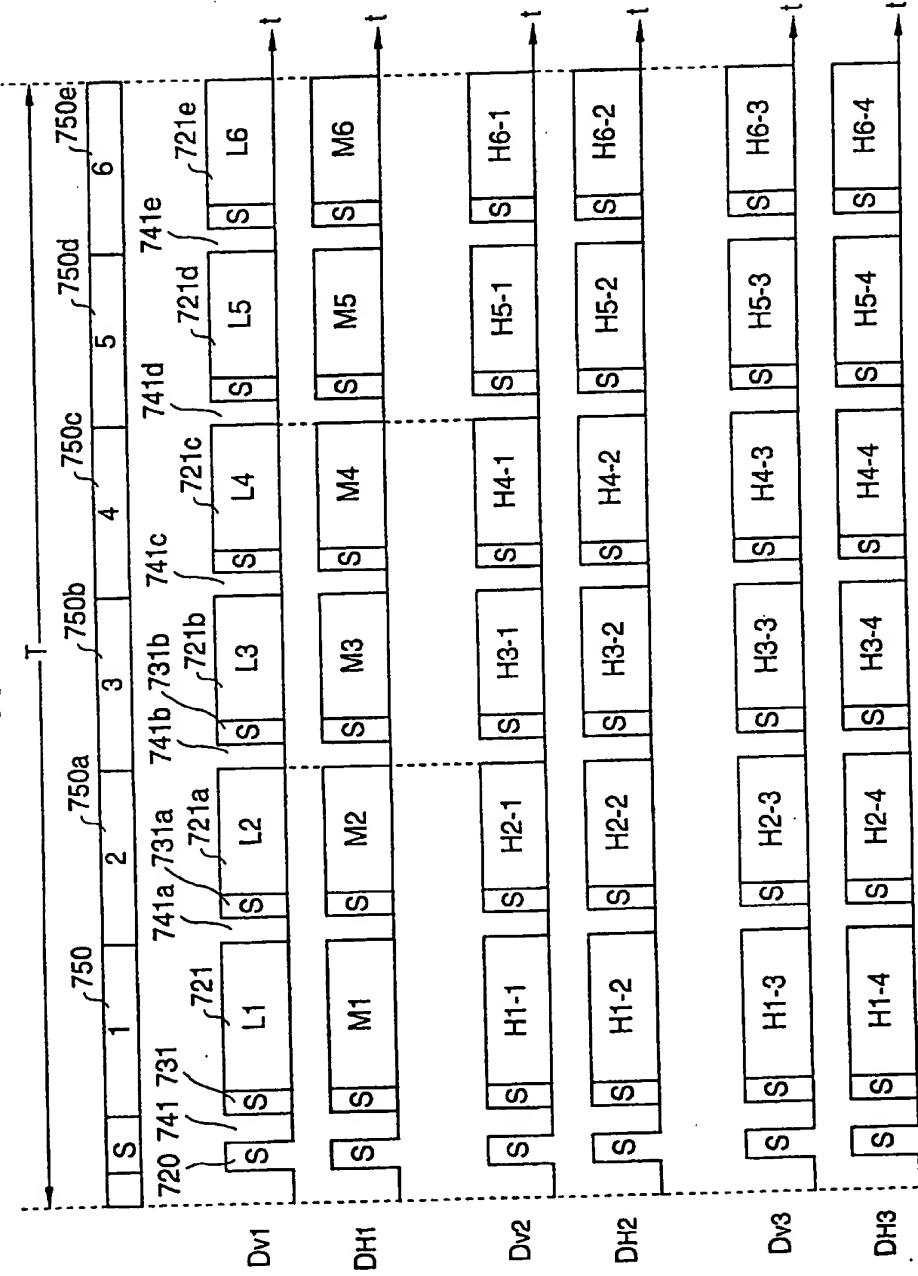
FIG. 50

FIG. 51

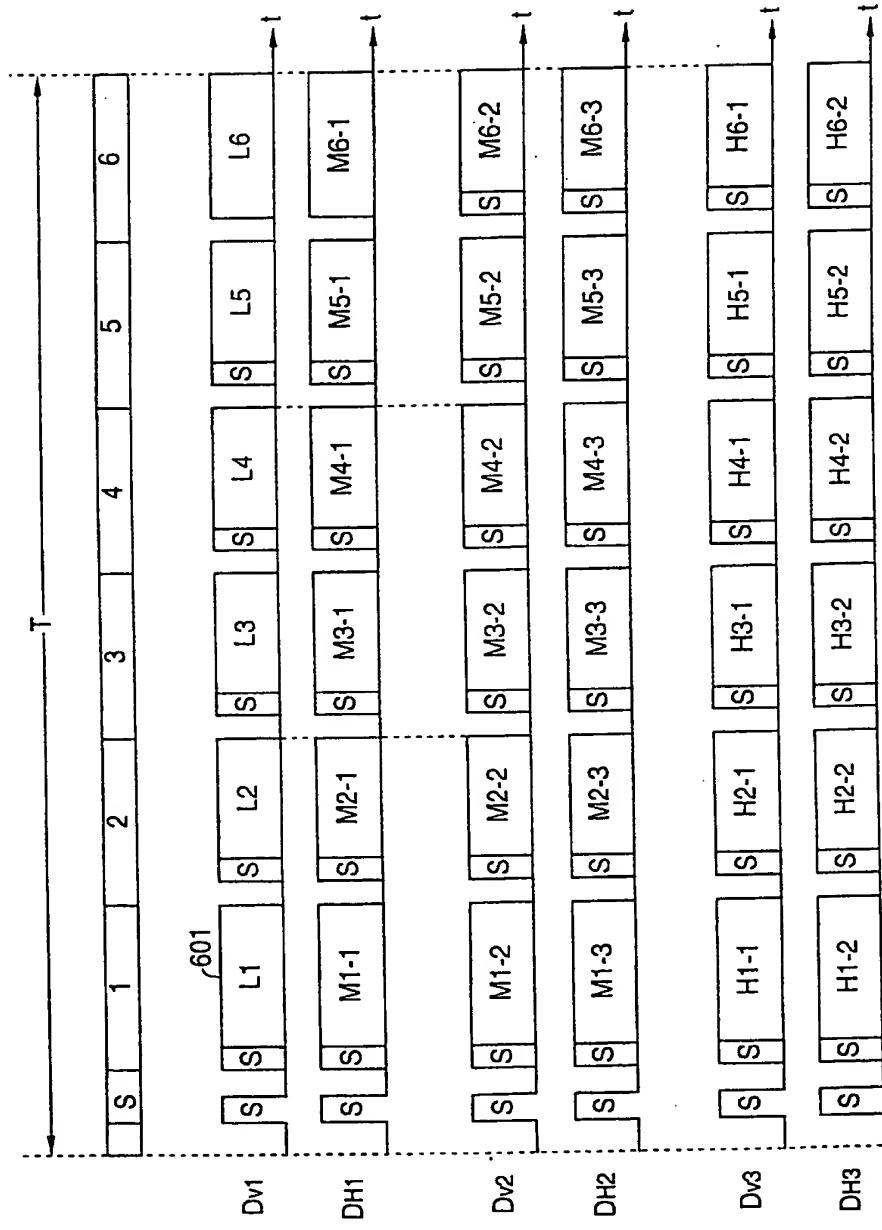


FIG. 52

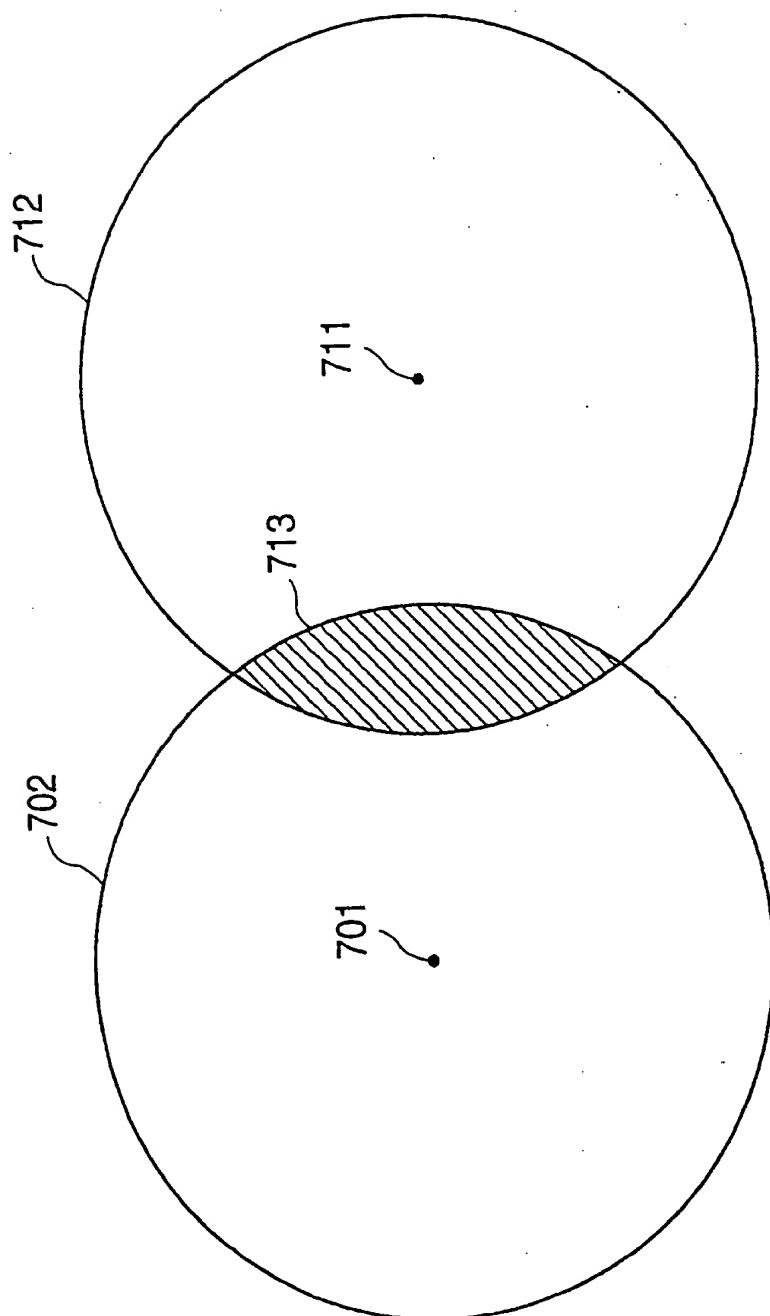


FIG. 53

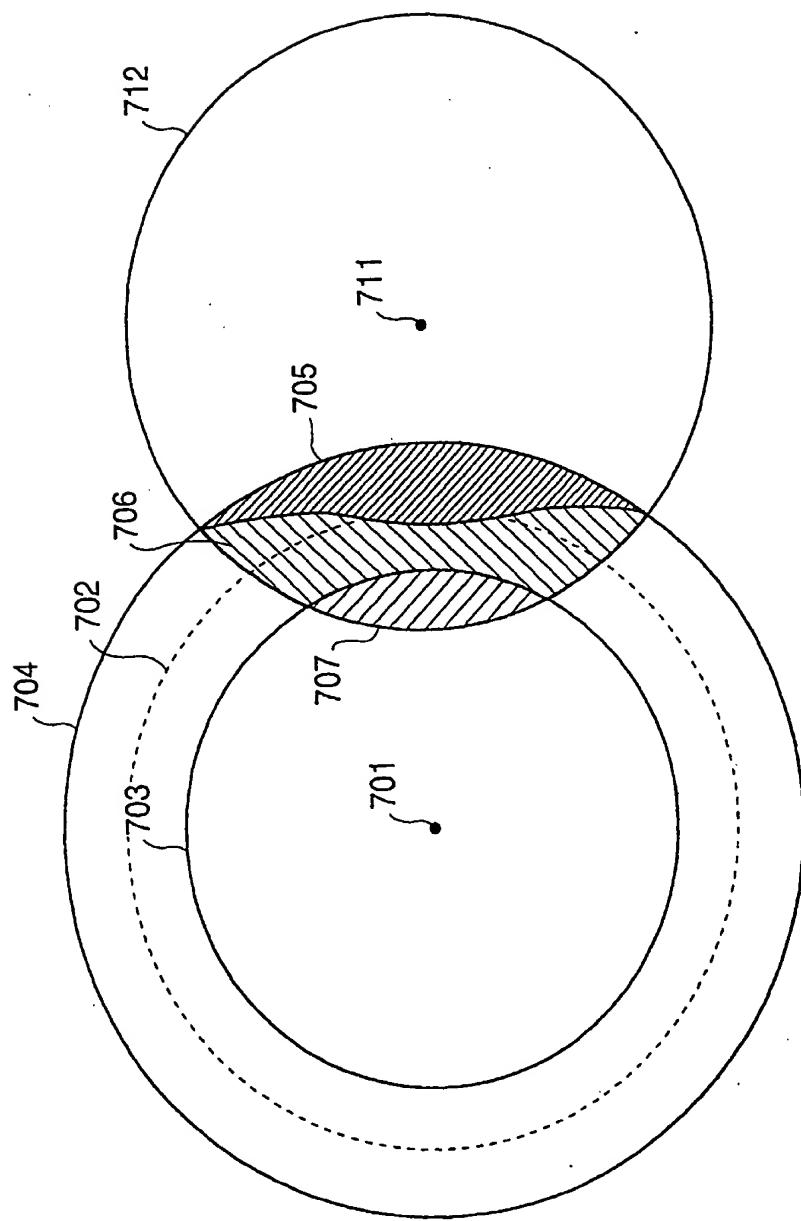


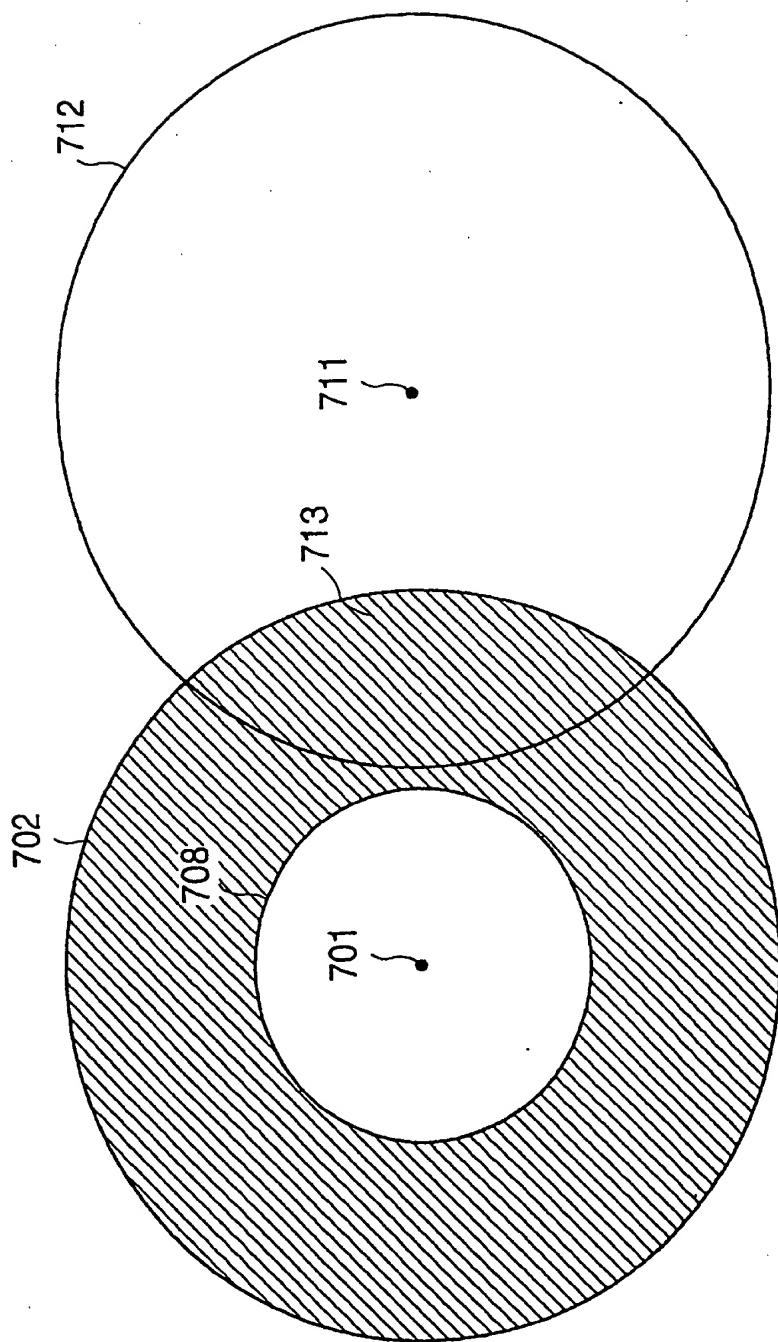
FIG. 54

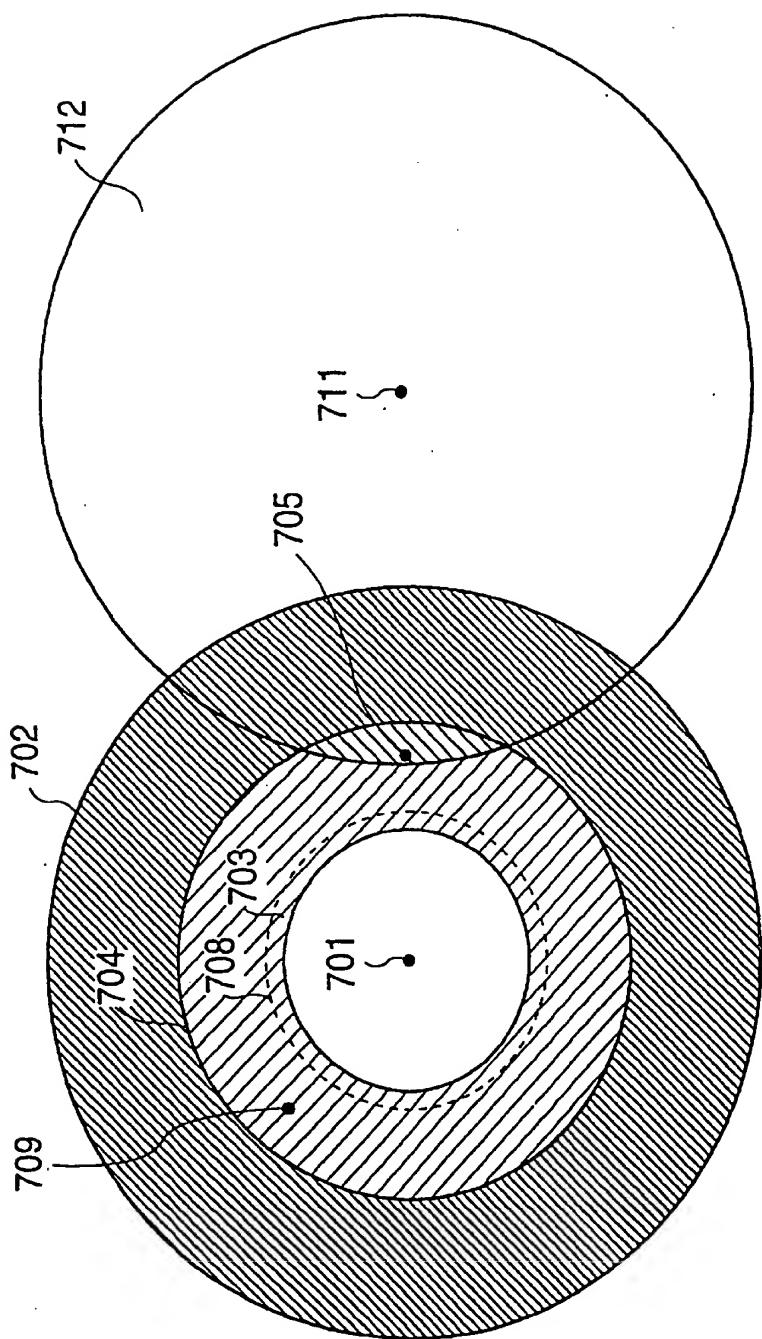
FIG. 55

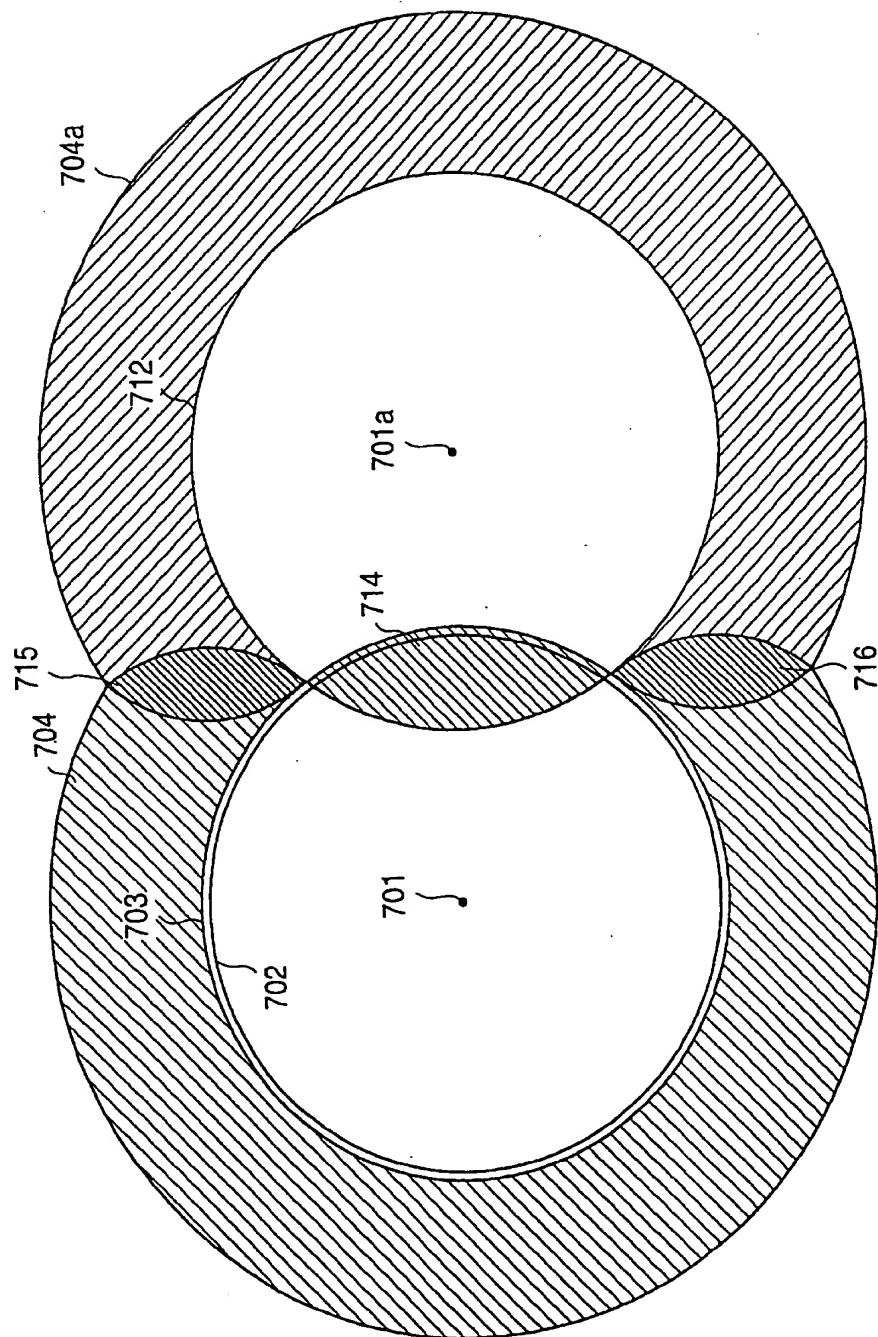
FIG. 56

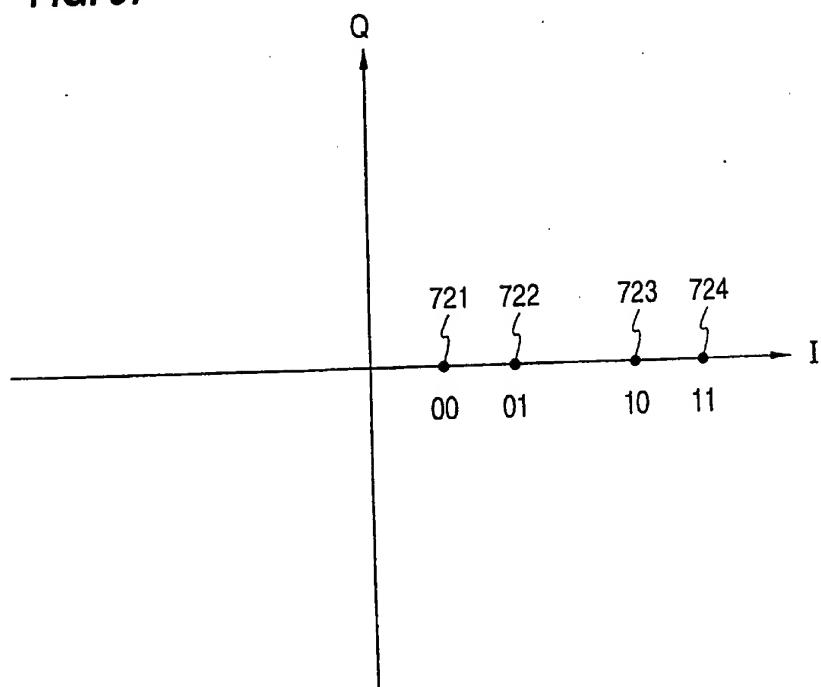
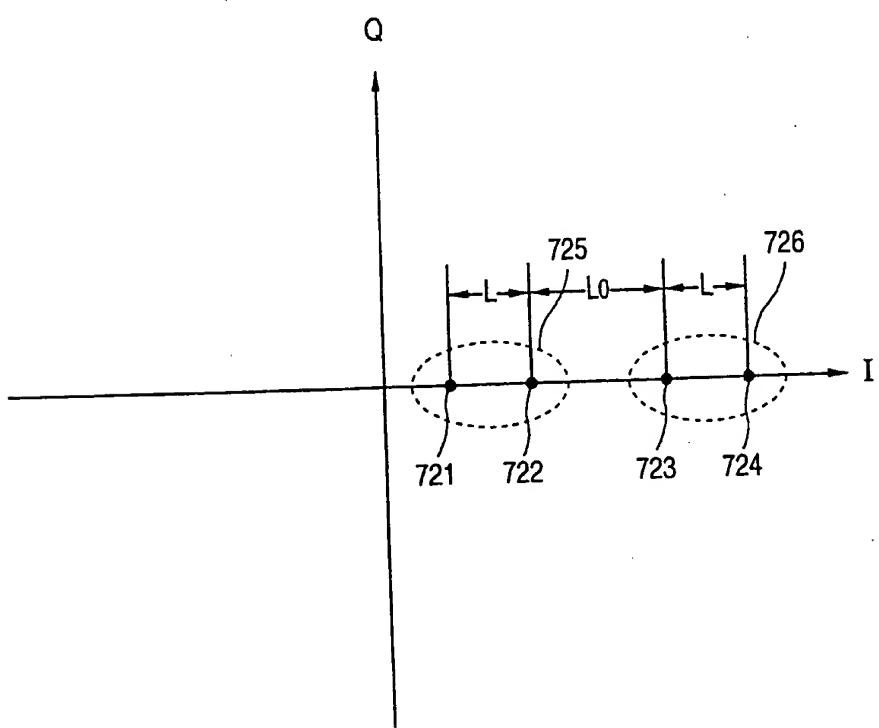
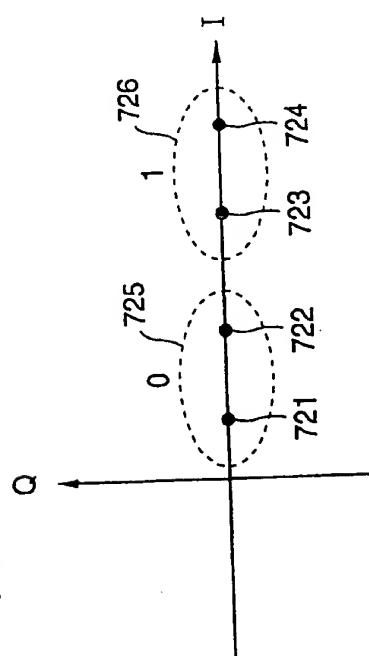
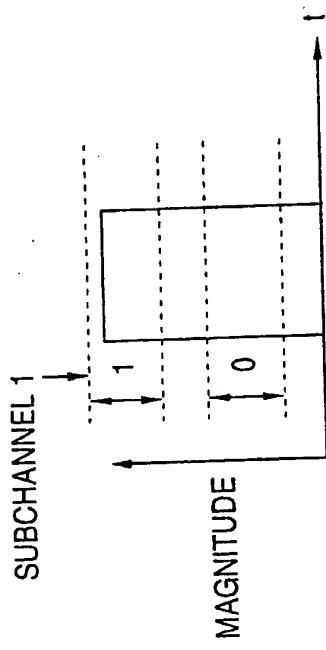
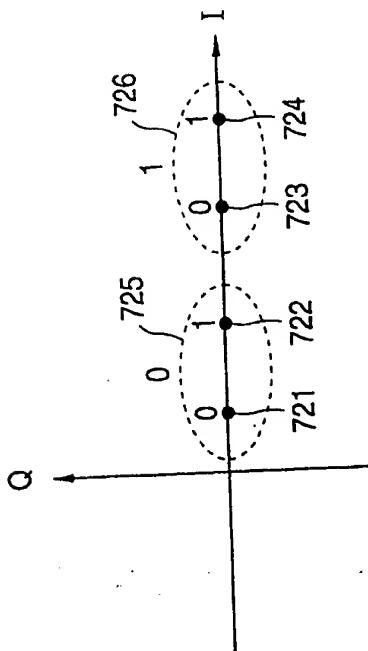
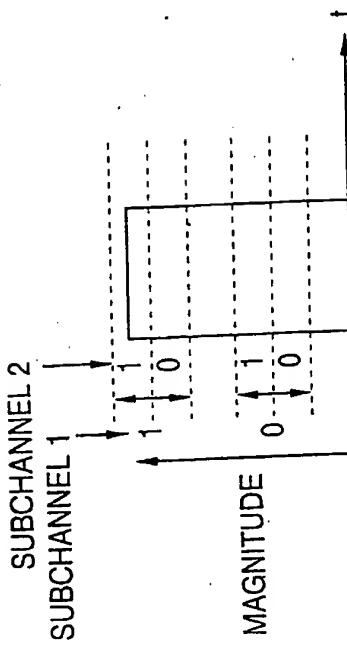
FIG. 57**FIG. 58**

FIG. 59(a)**FIG. 59(c)****FIG. 59(b)****FIG. 59(d)**

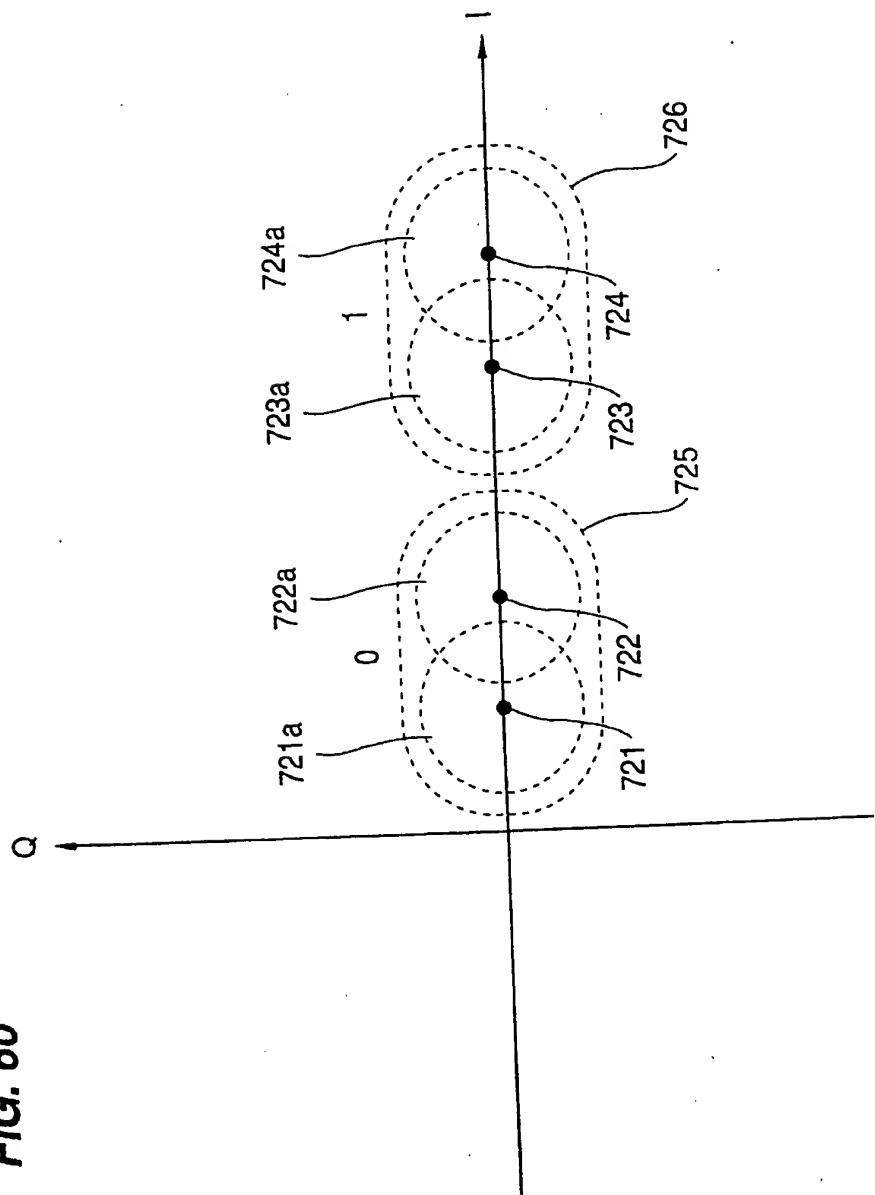


FIG. 60

FIG. 61

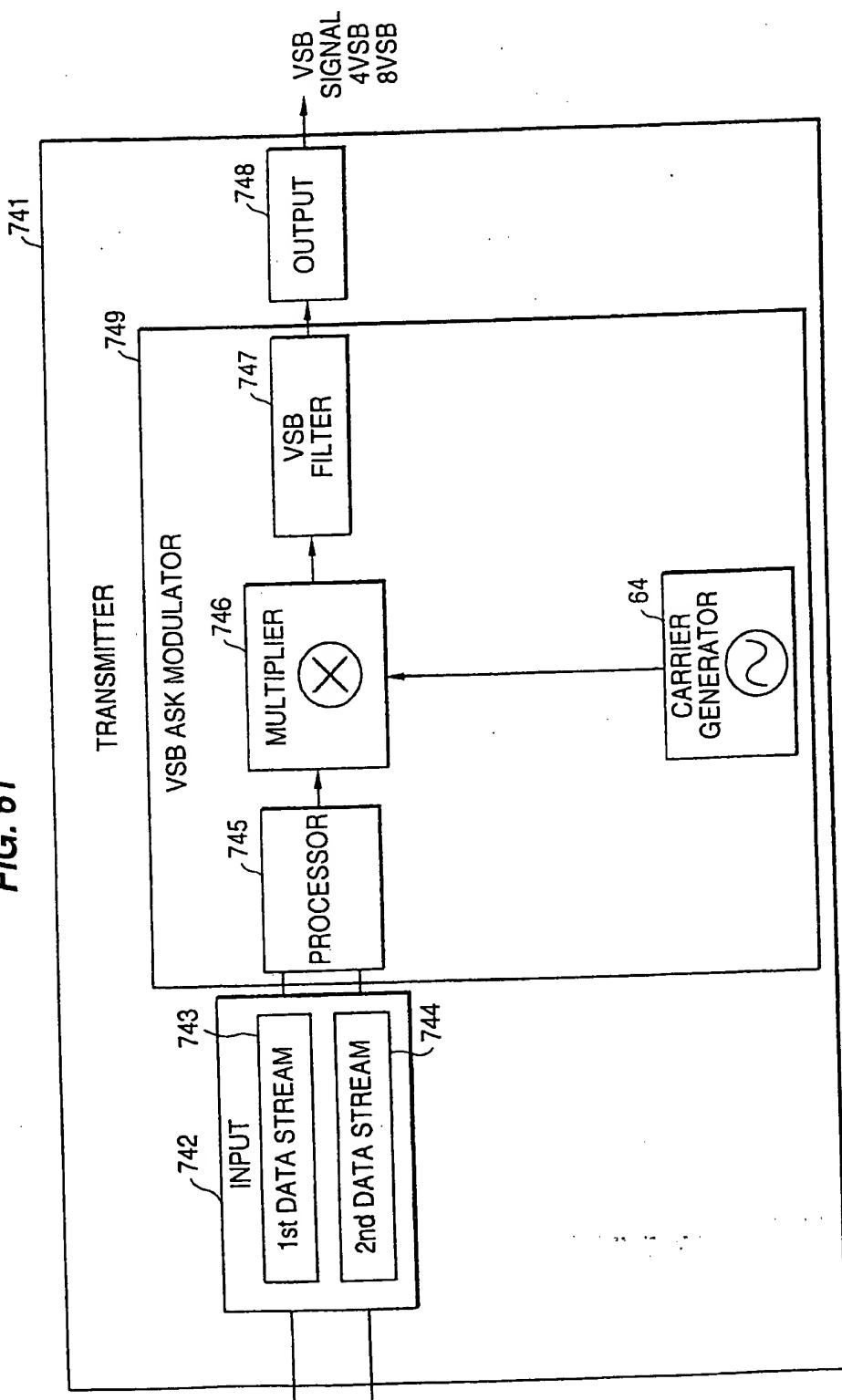


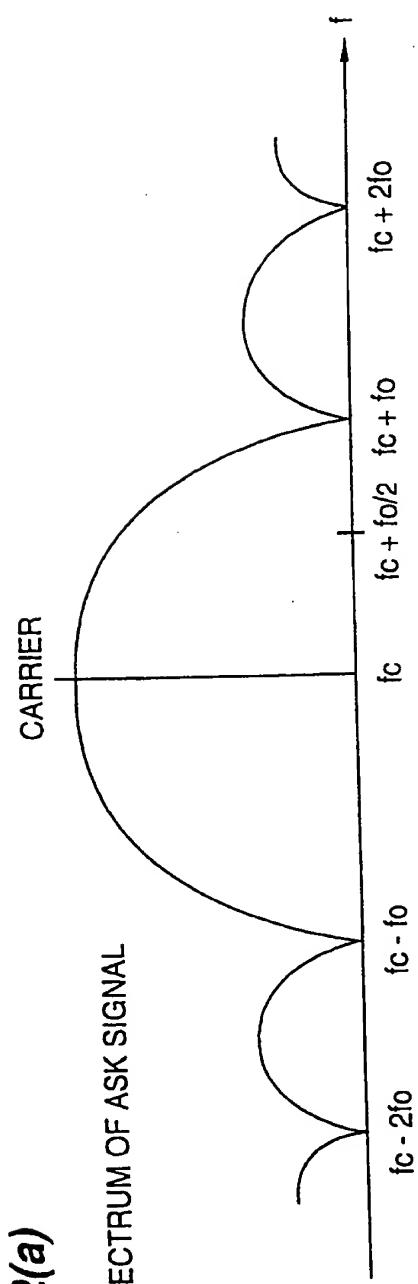
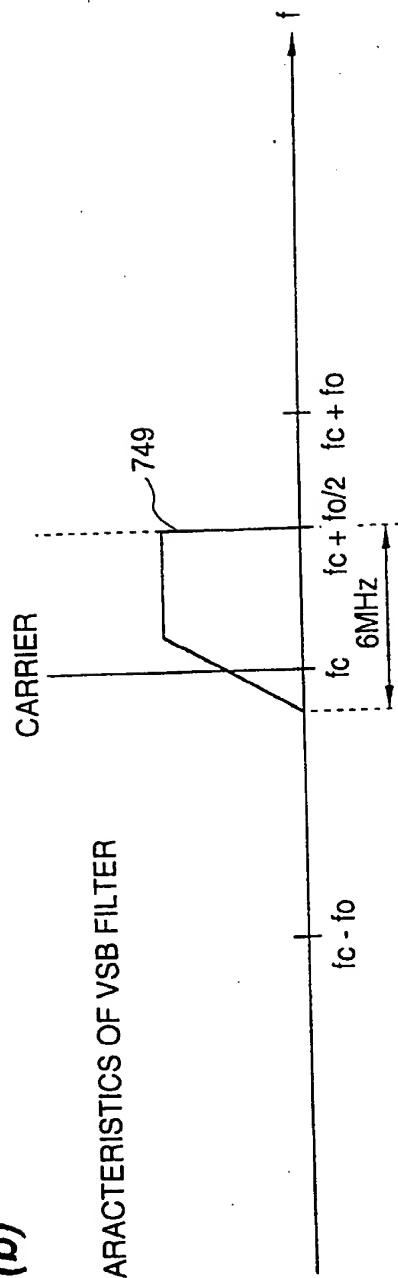
FIG. 62(a)**FIG. 62(b)**

FIG. 63

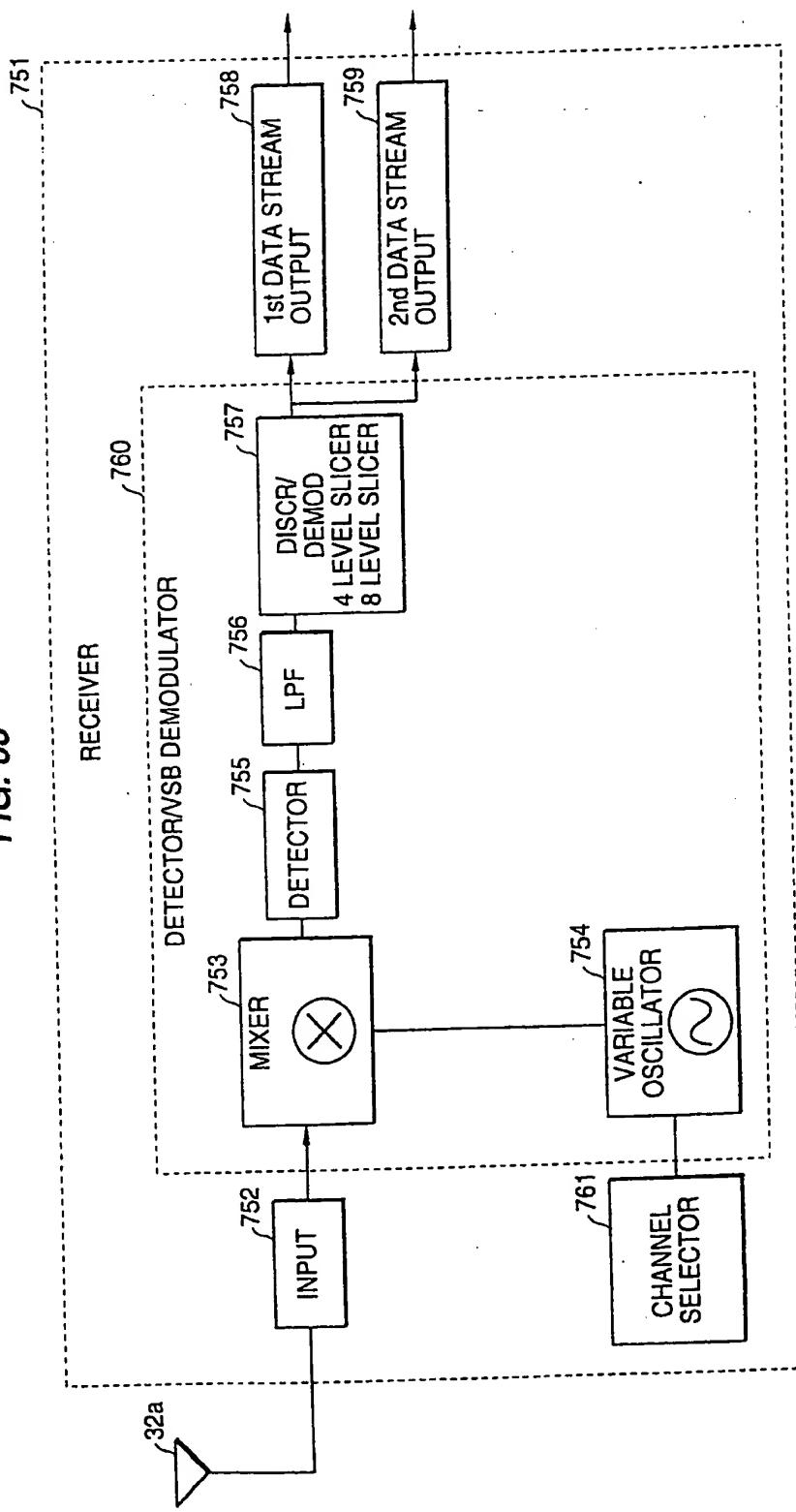
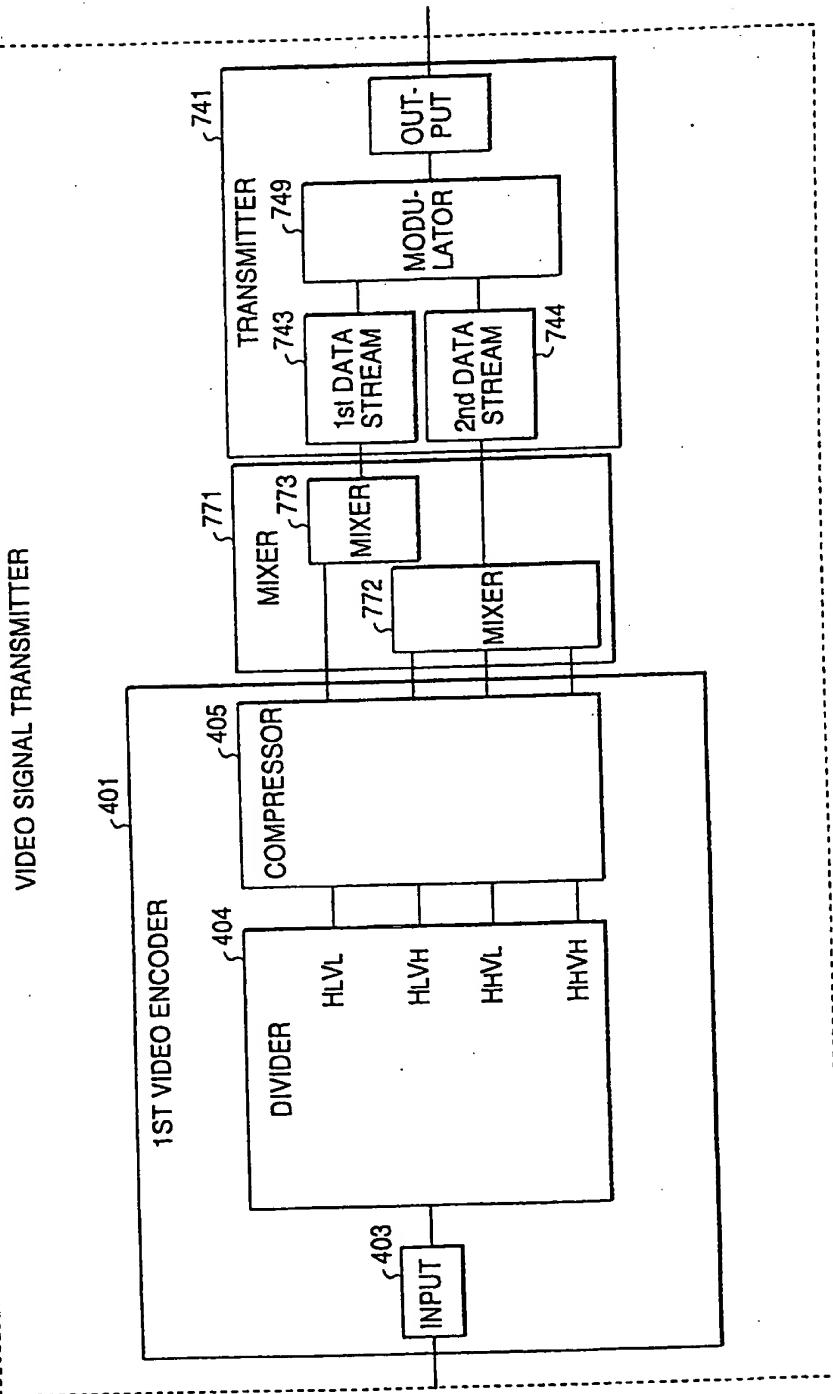
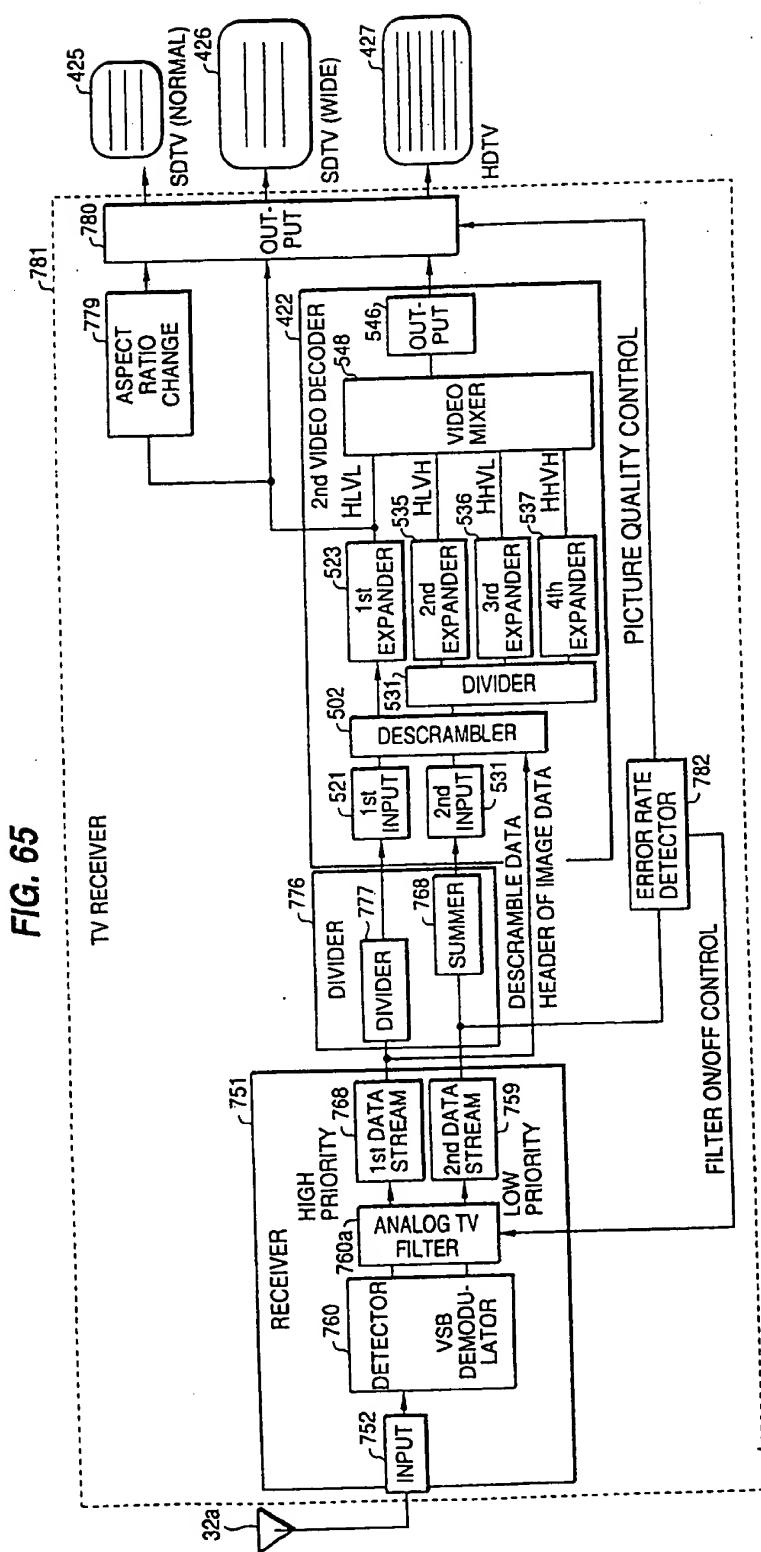


FIG. 64



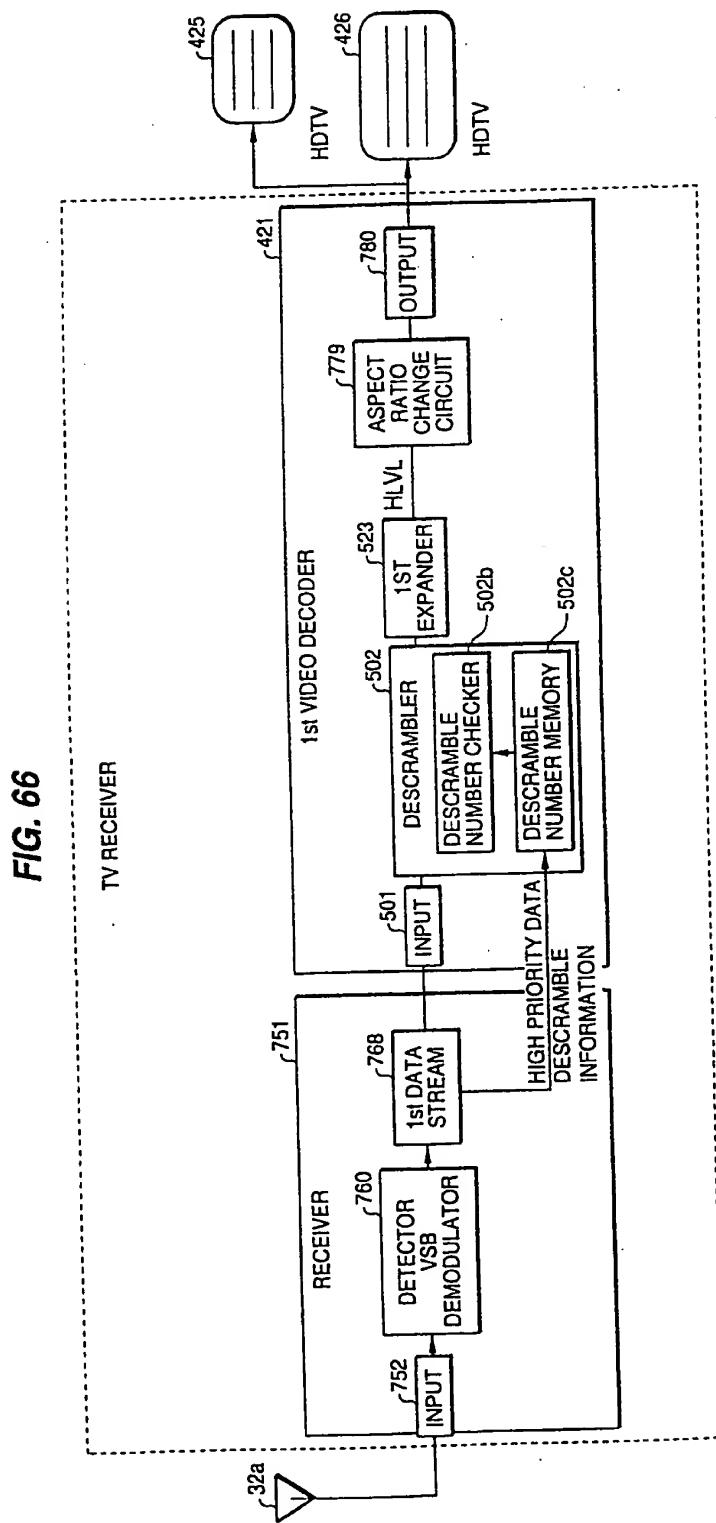
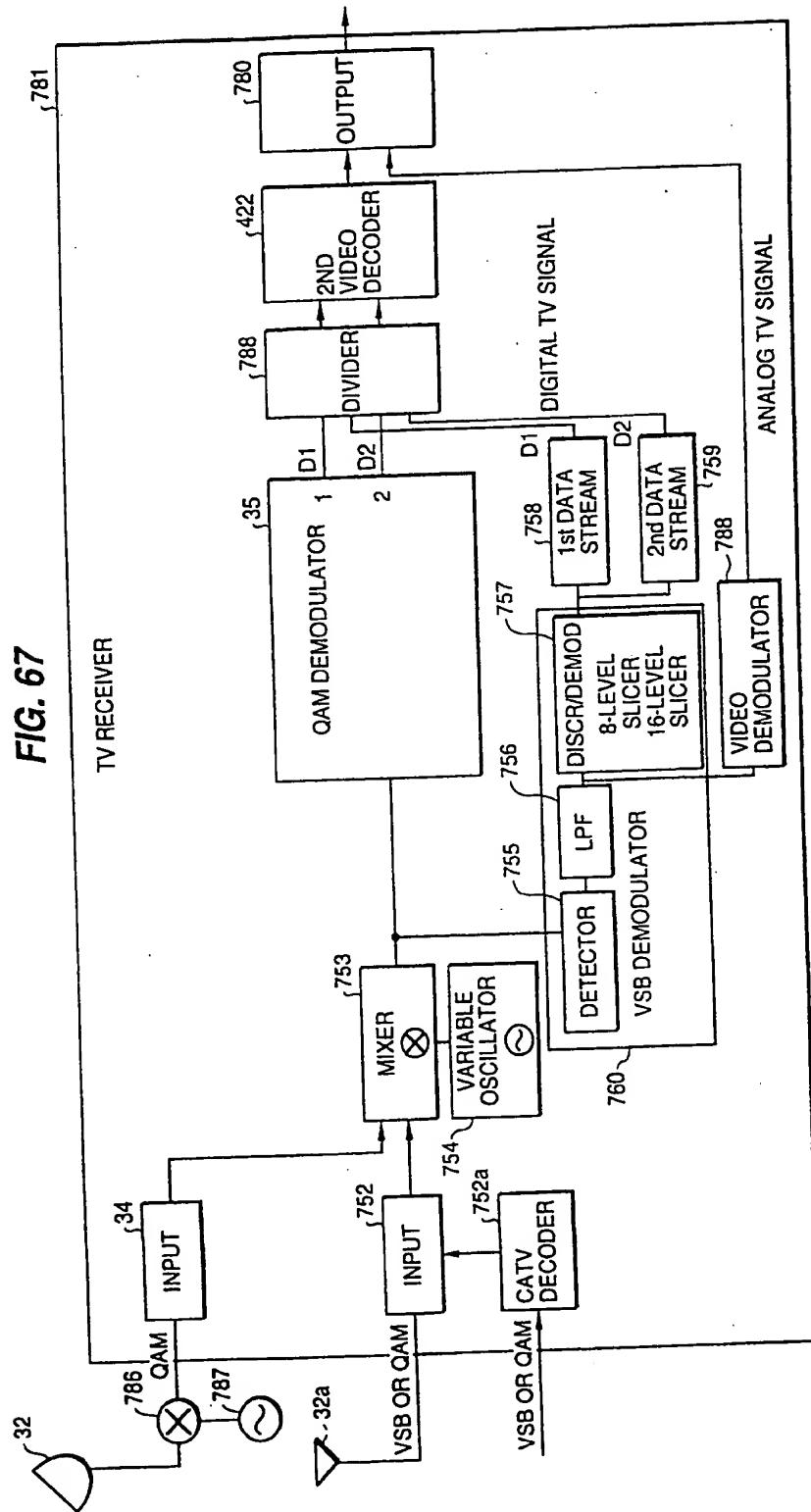


FIG. 67



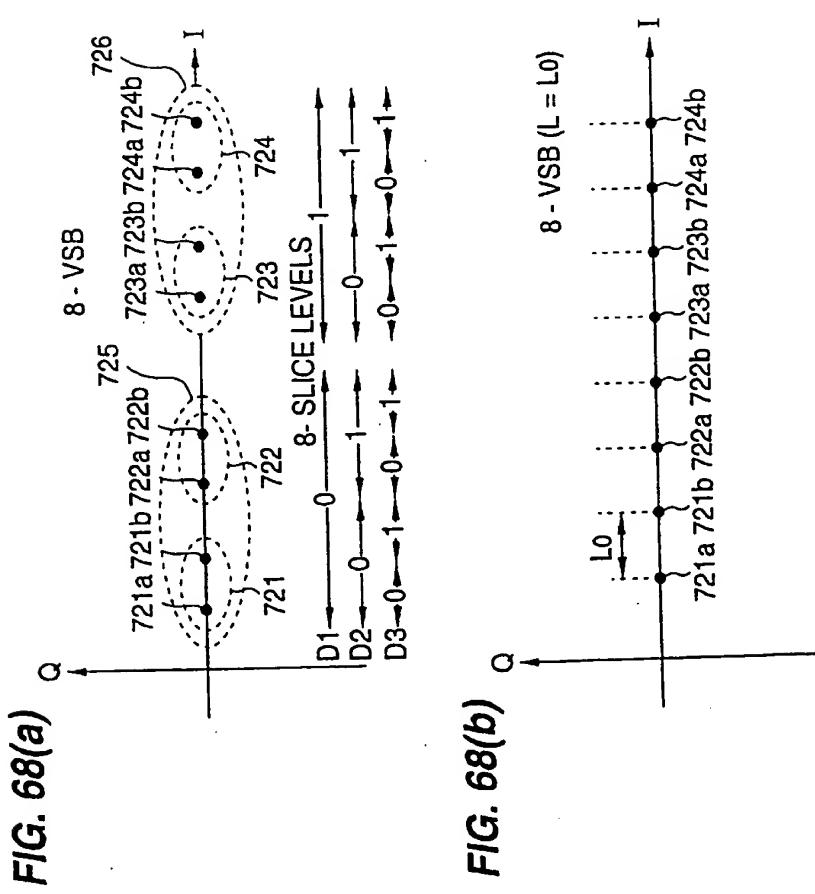


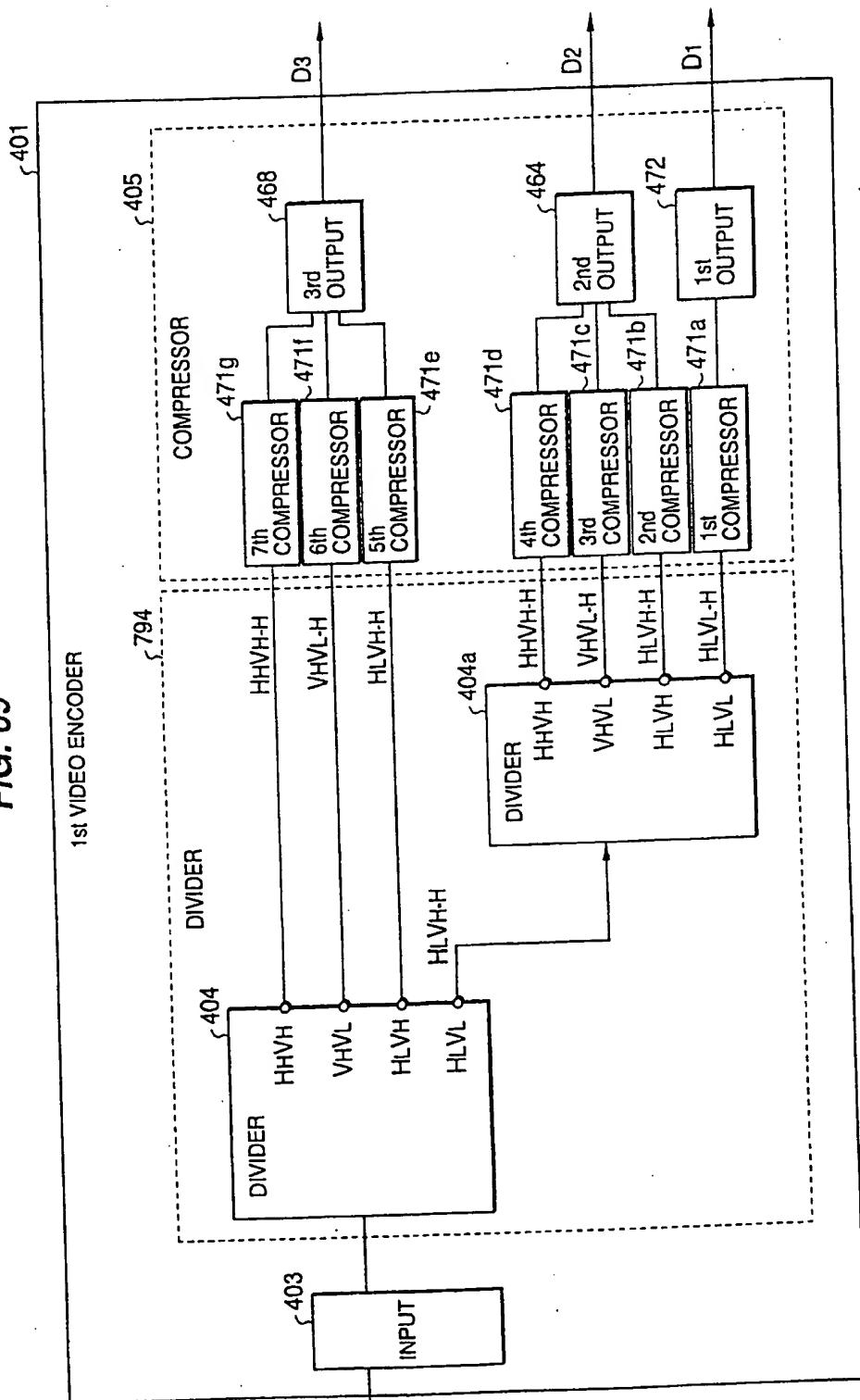
FIG. 69

FIG. 70

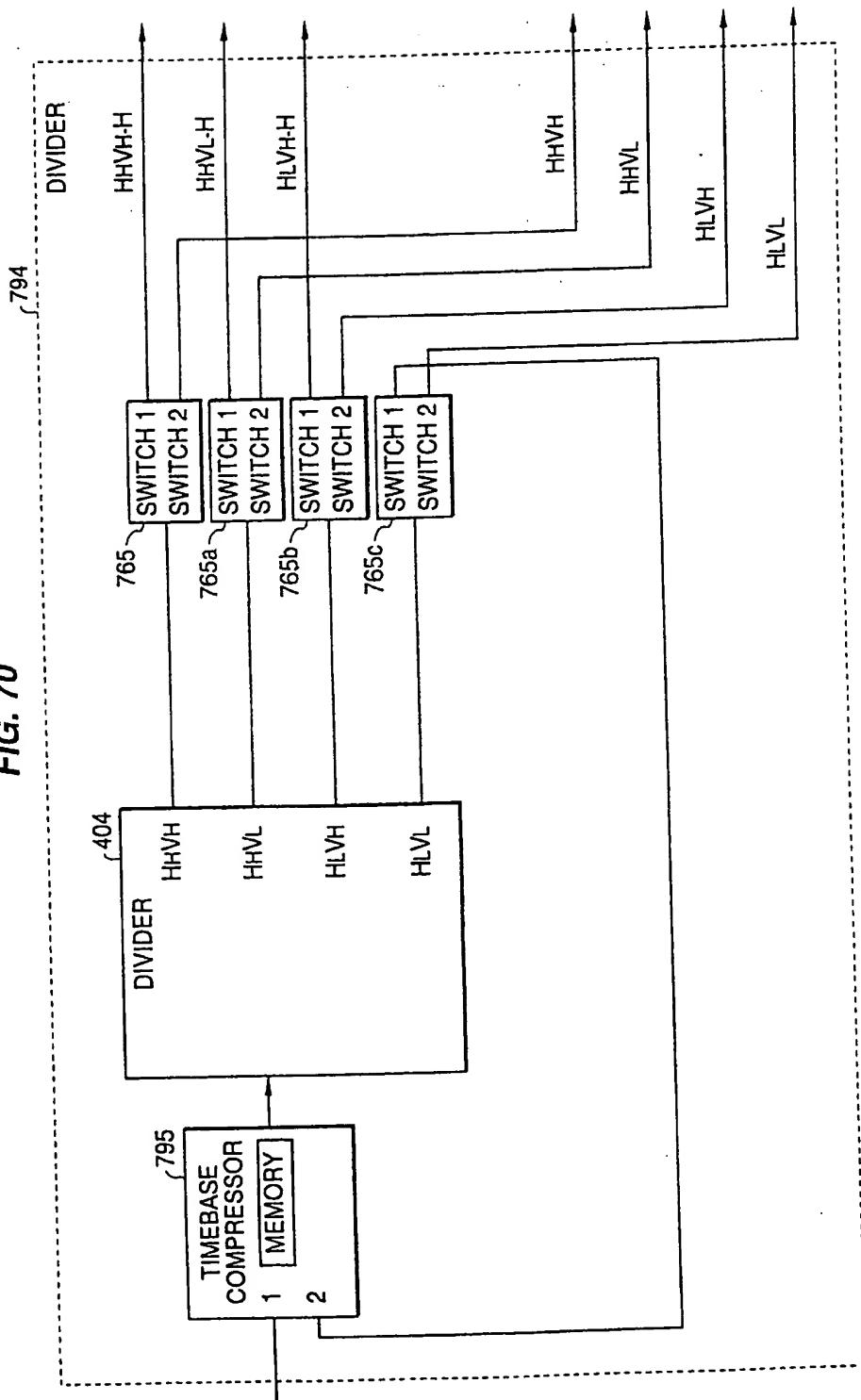


FIG. 71

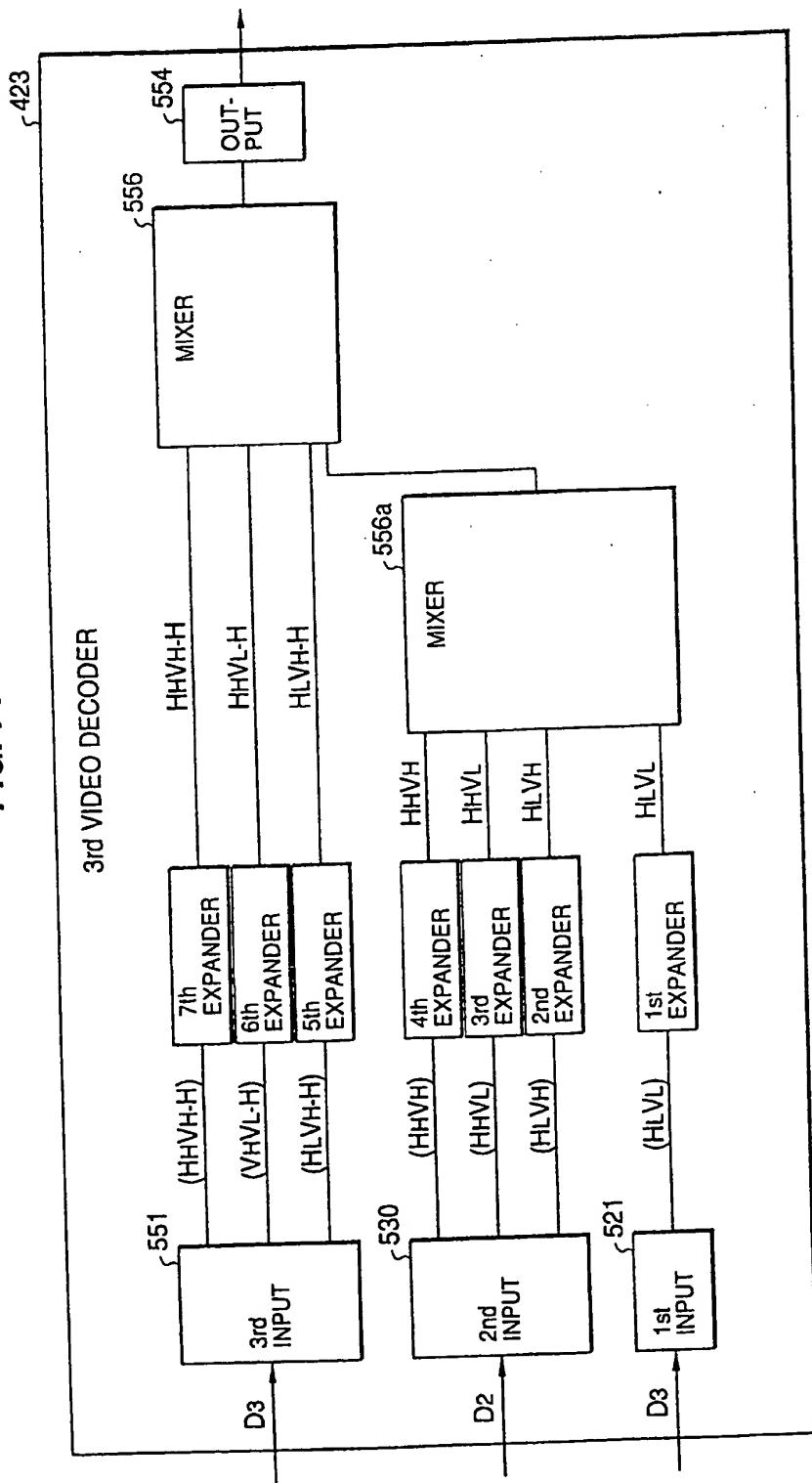


FIG. 72

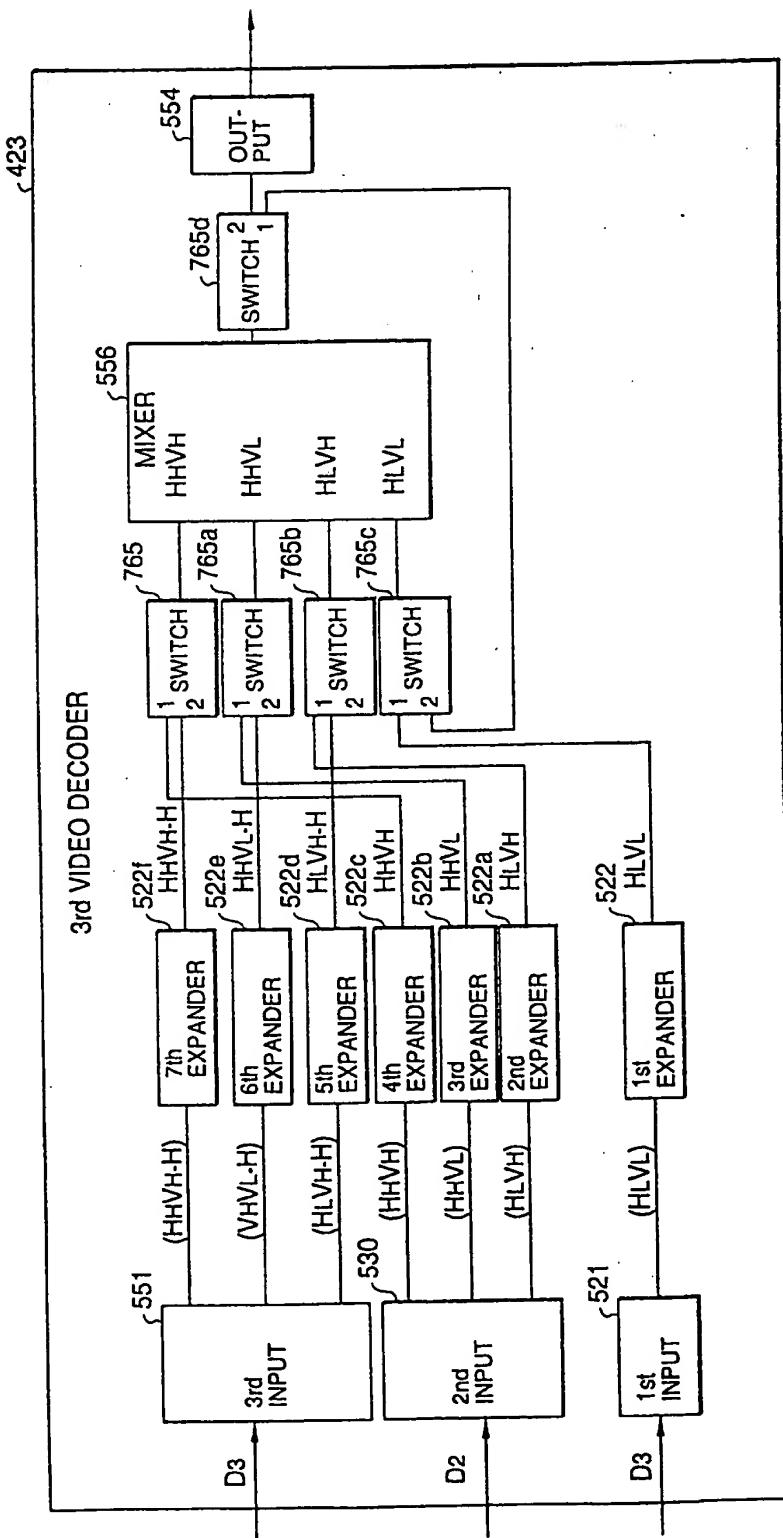
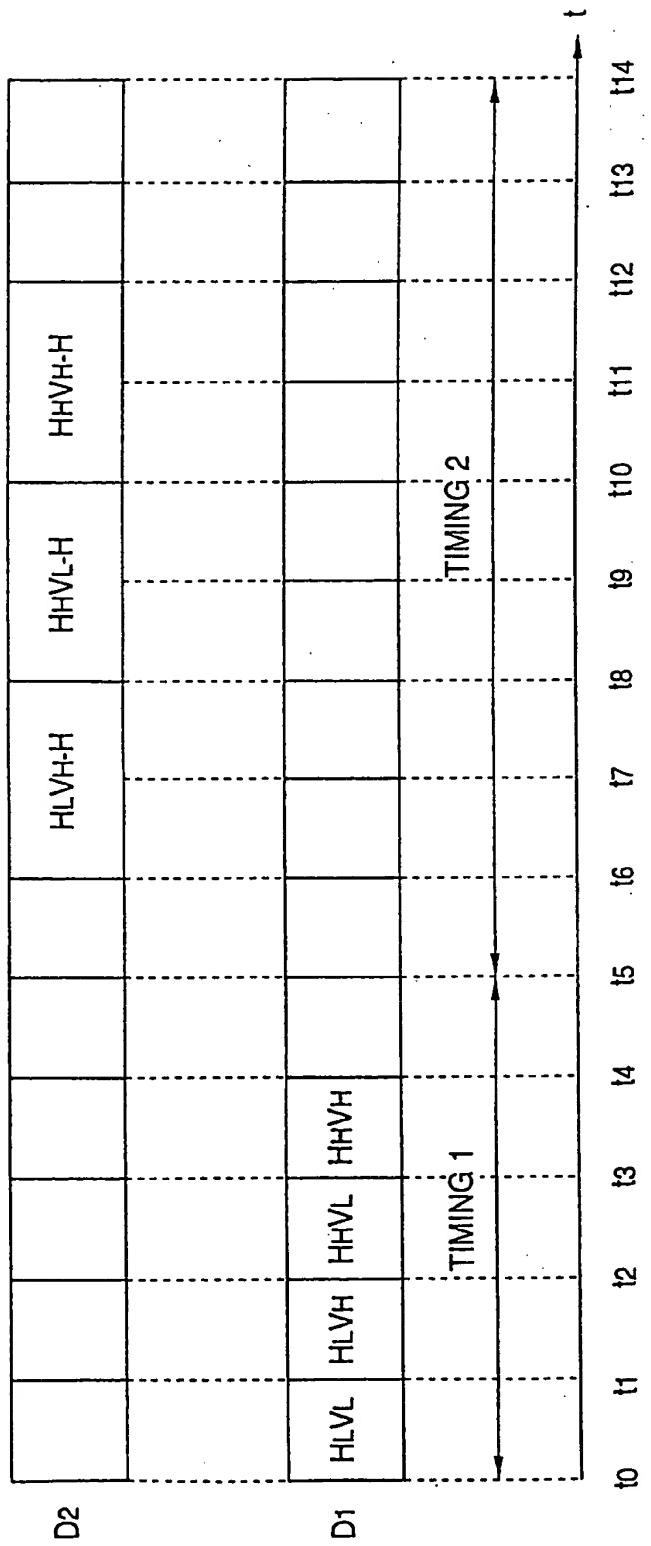


FIG. 73

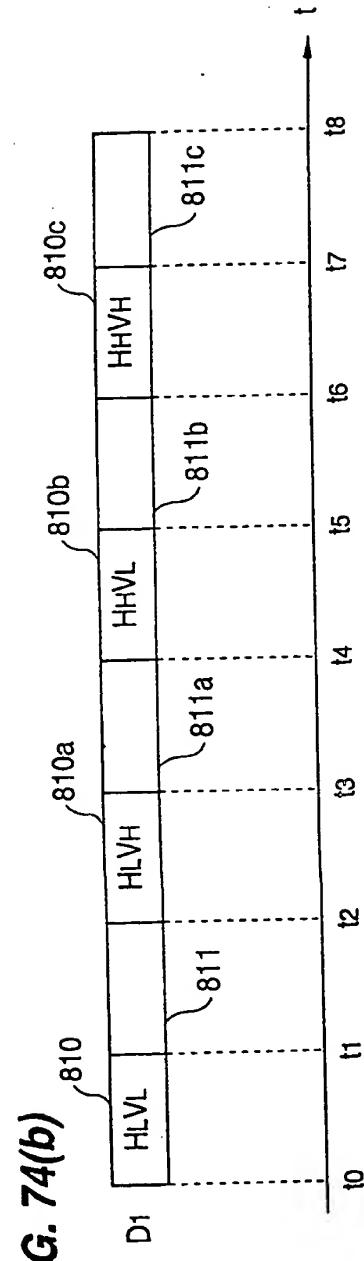
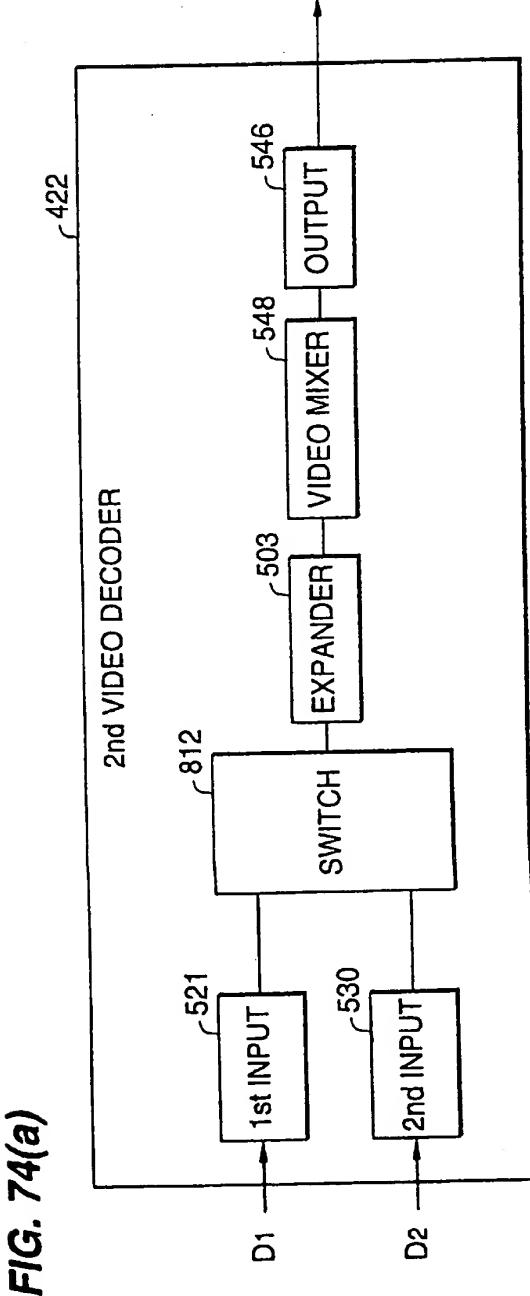


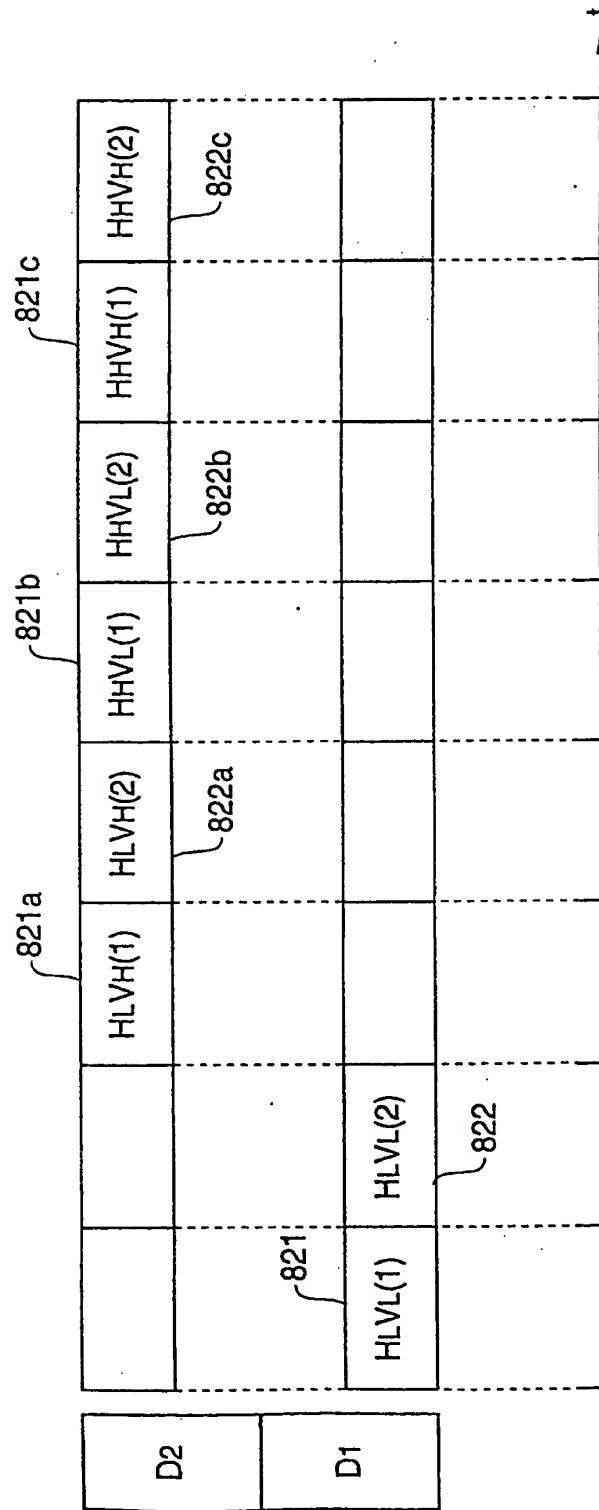
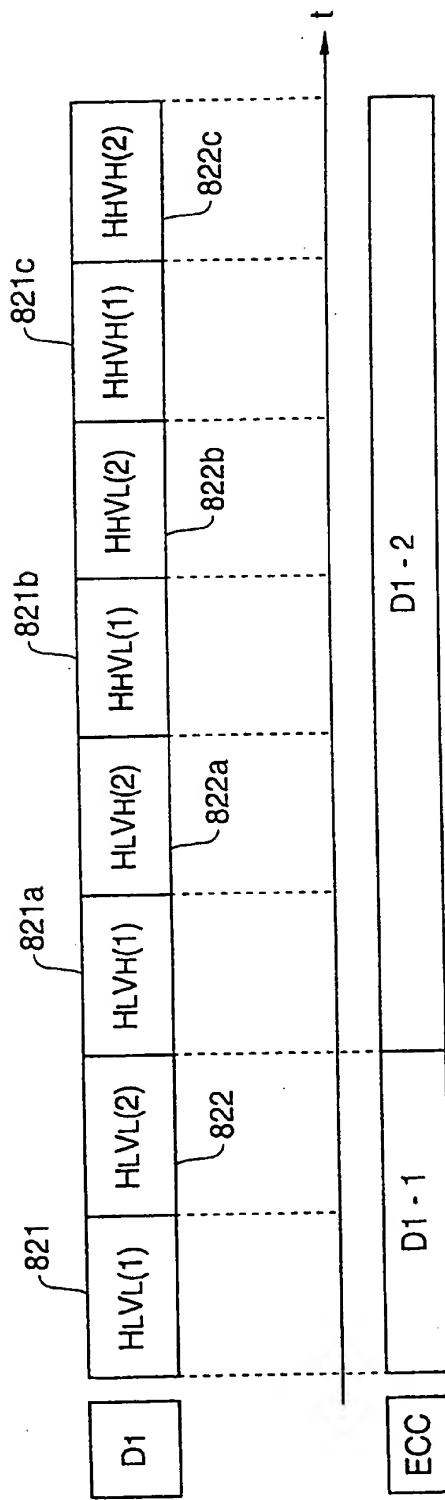
FIG. 75

FIG. 76

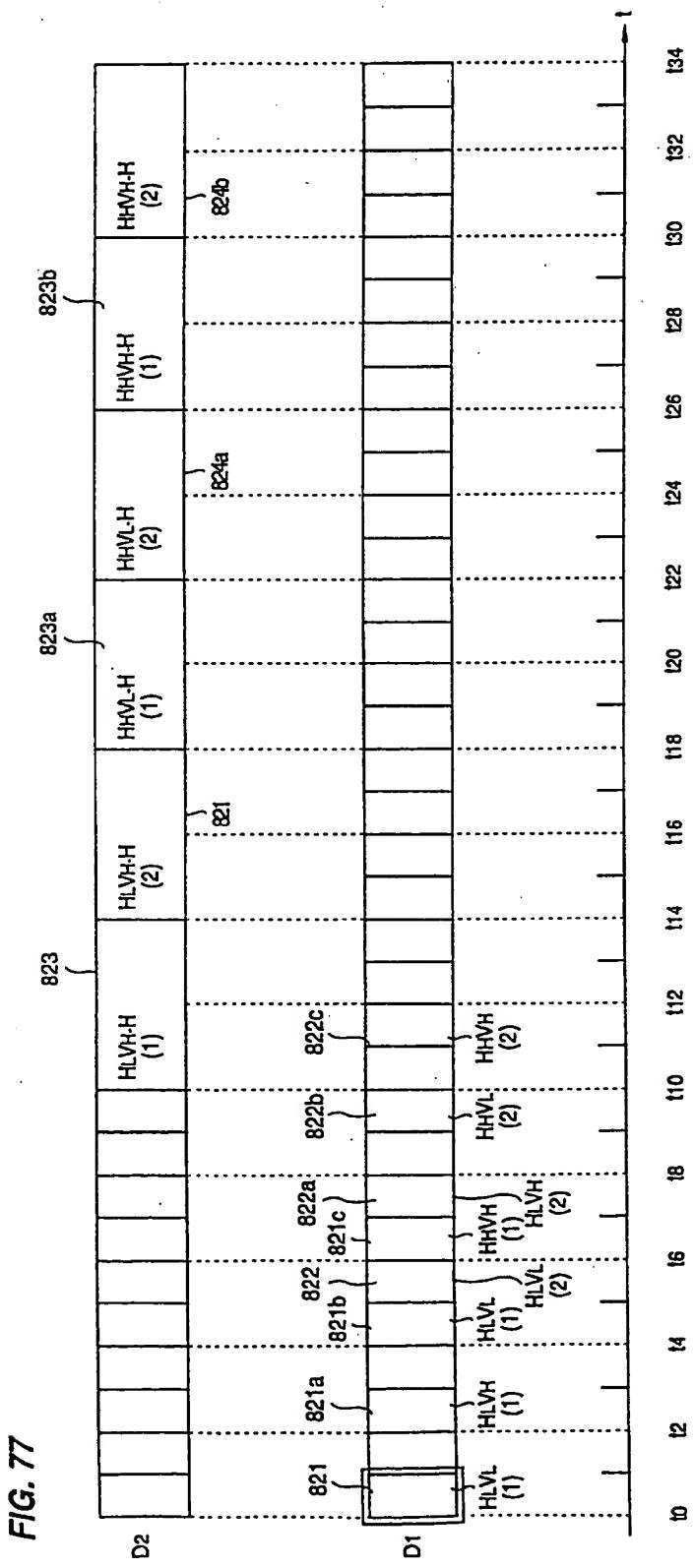


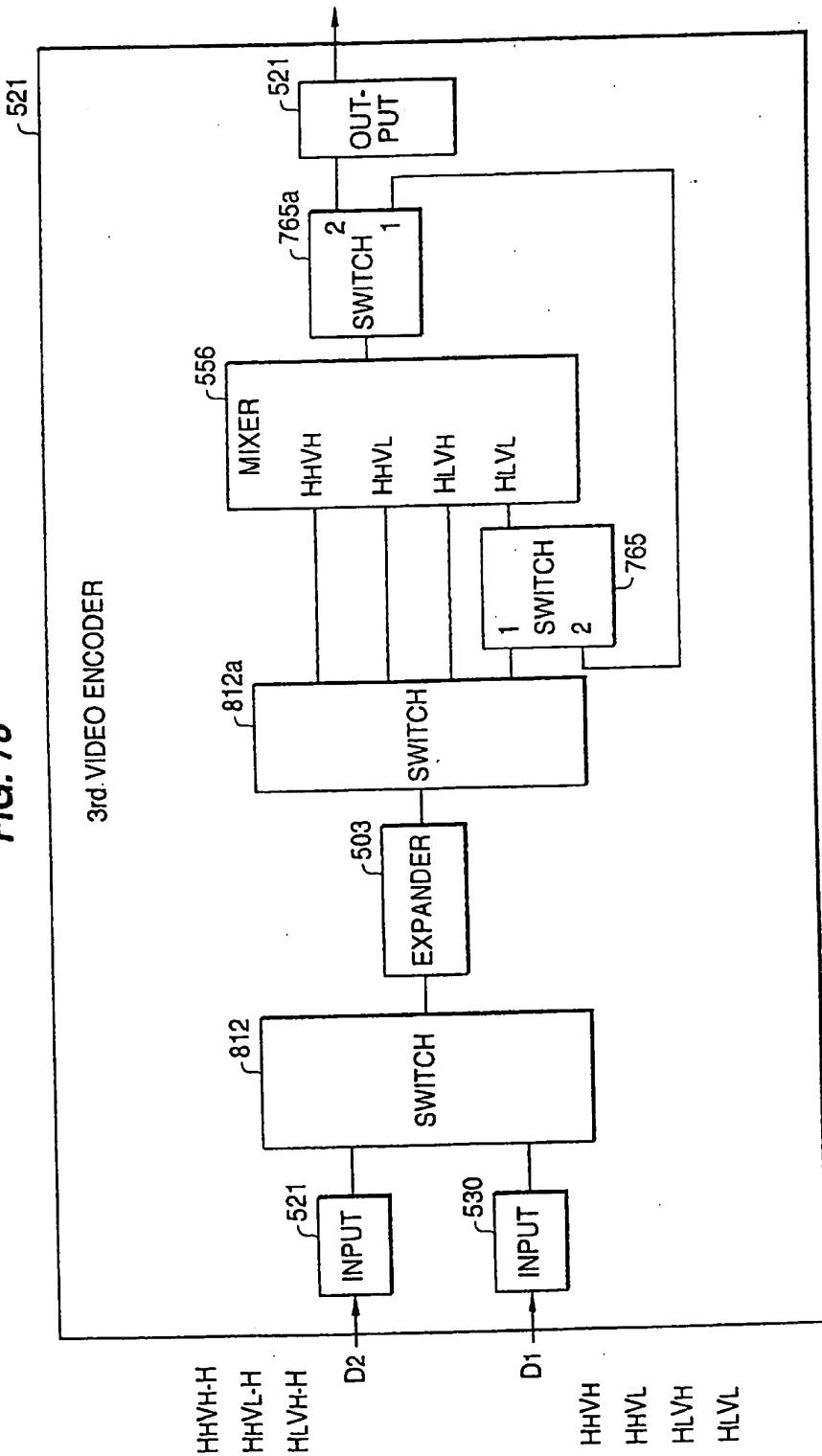
FIG. 78

FIG. 79

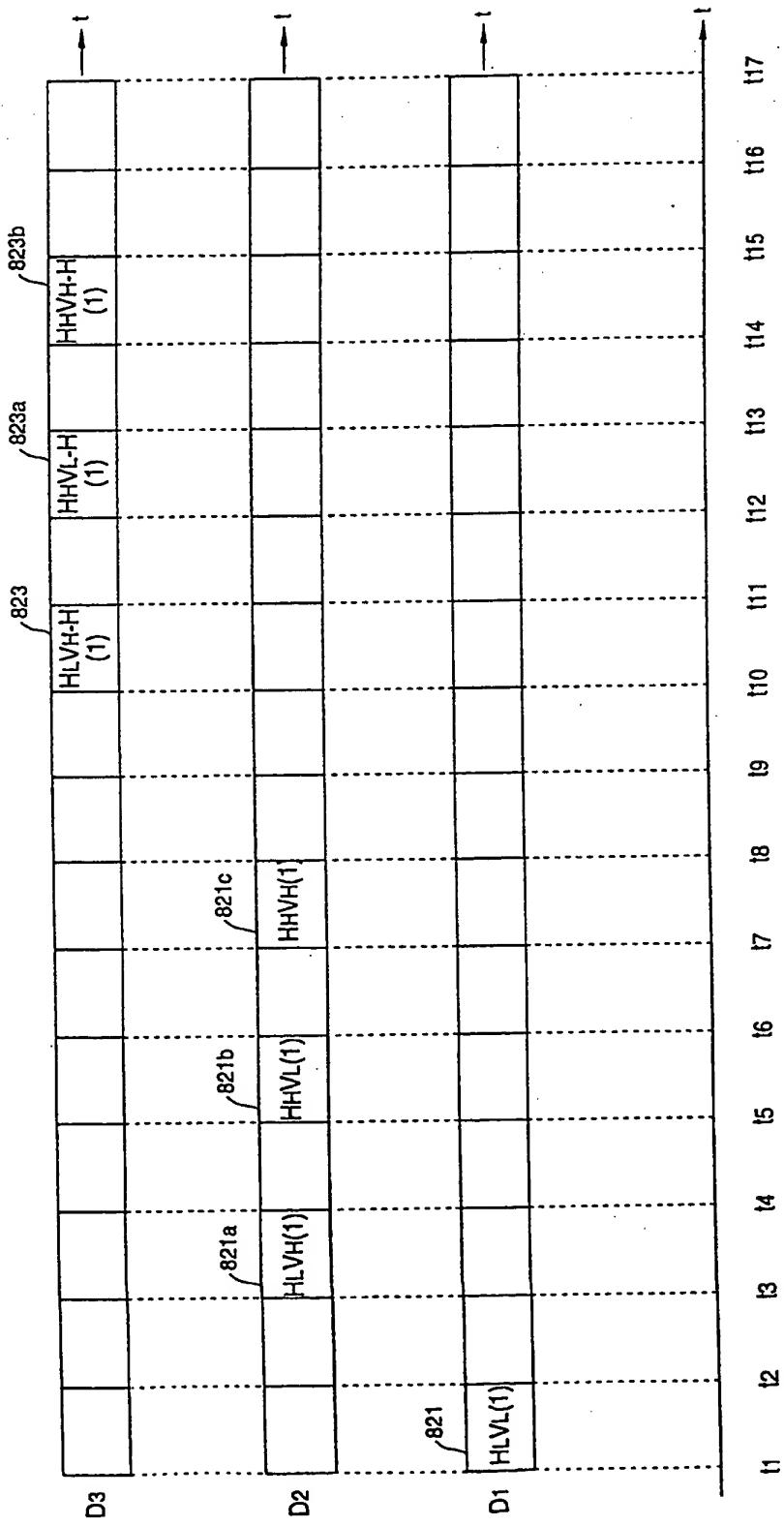


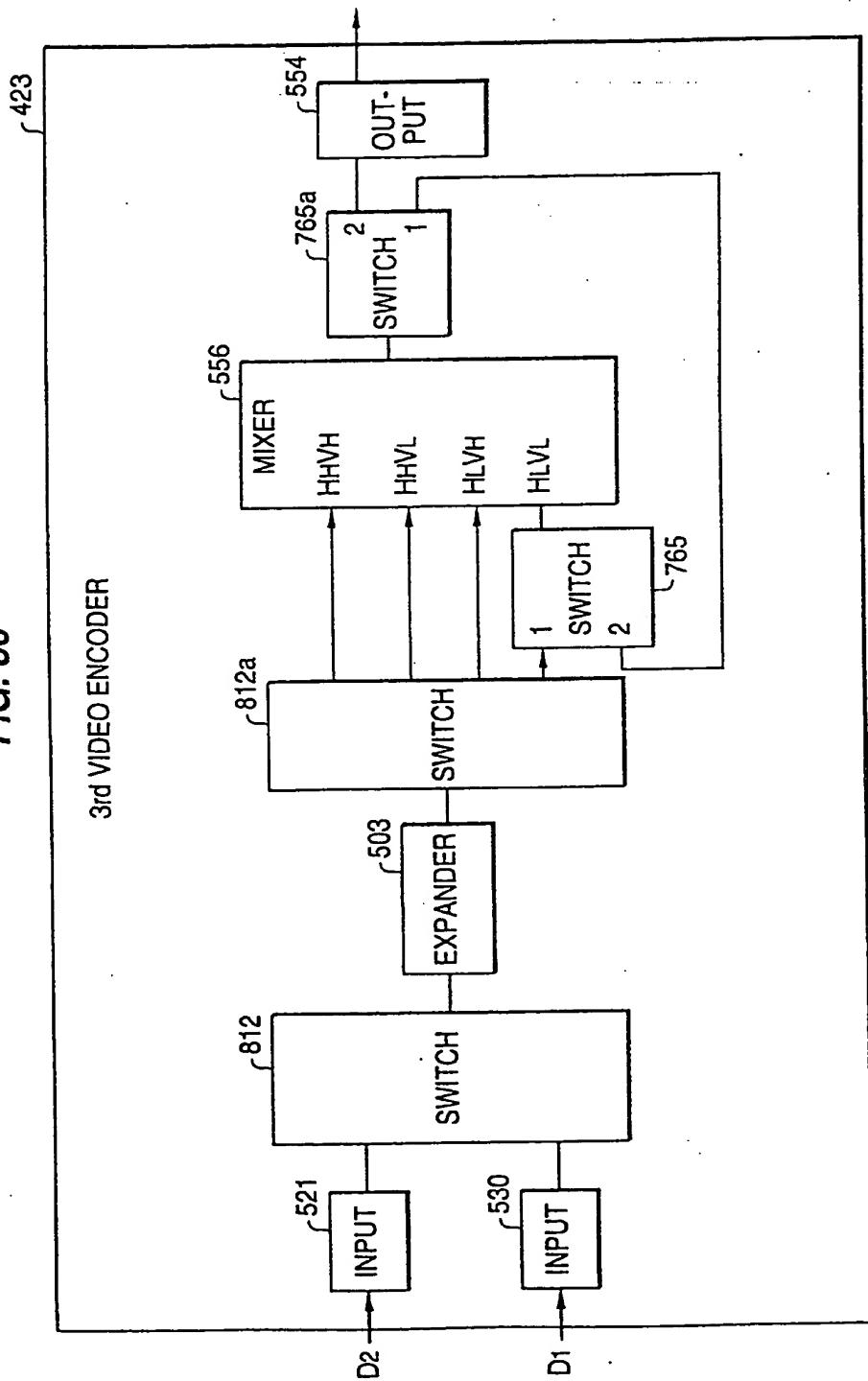
FIG. 80

FIG. 81

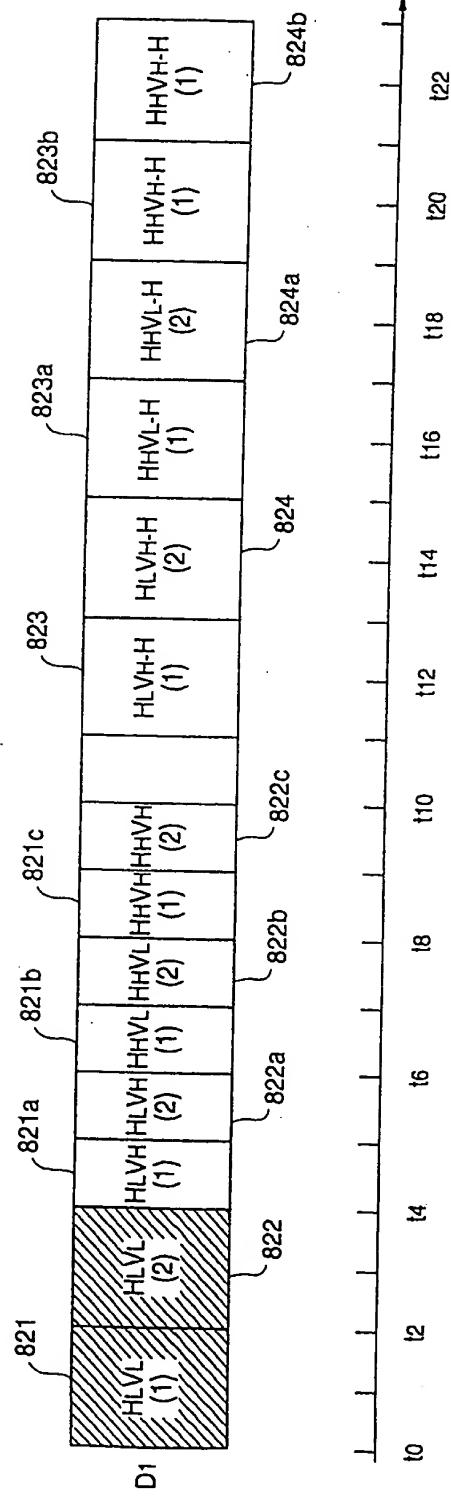


FIG. 82

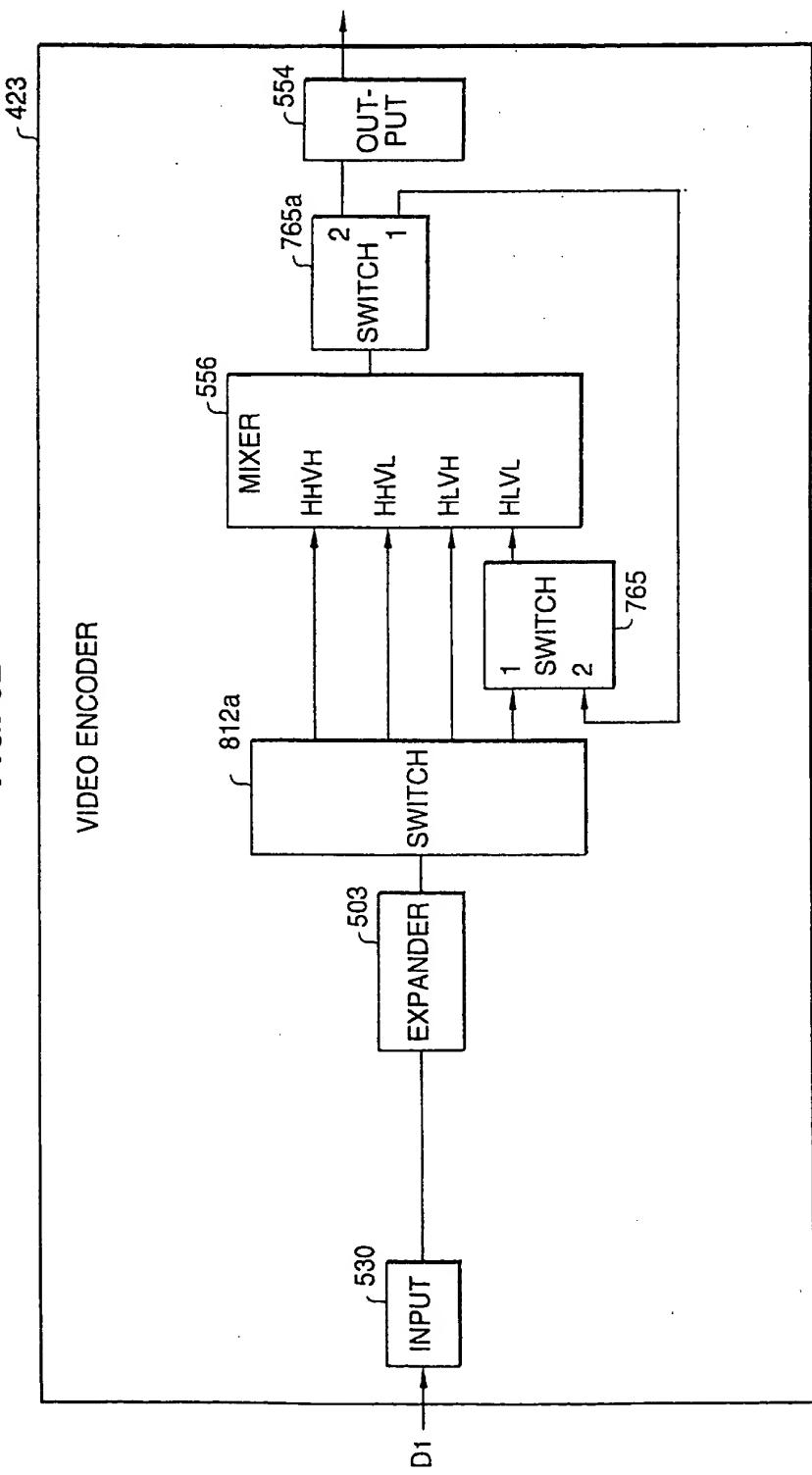
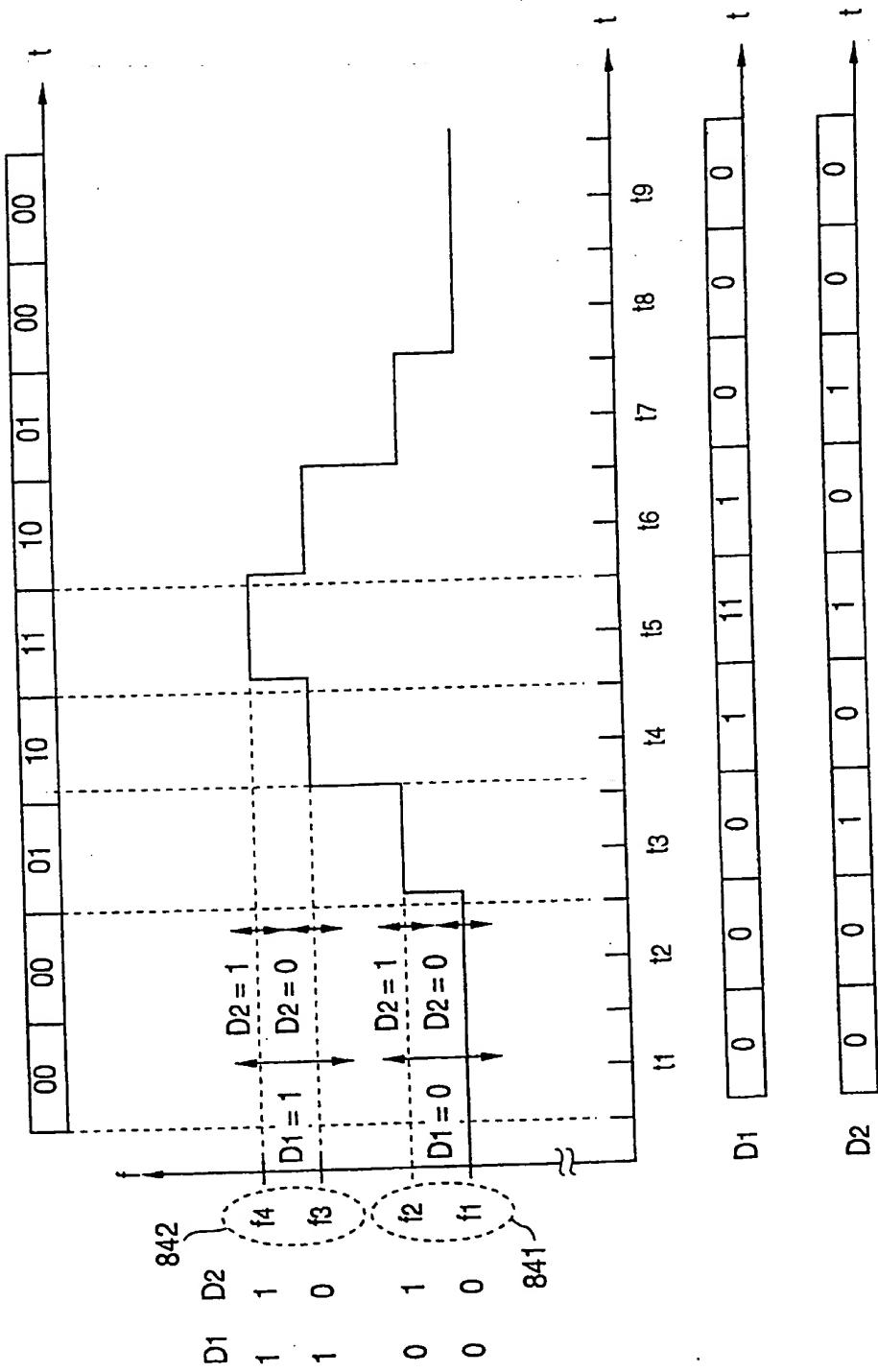


FIG. 83



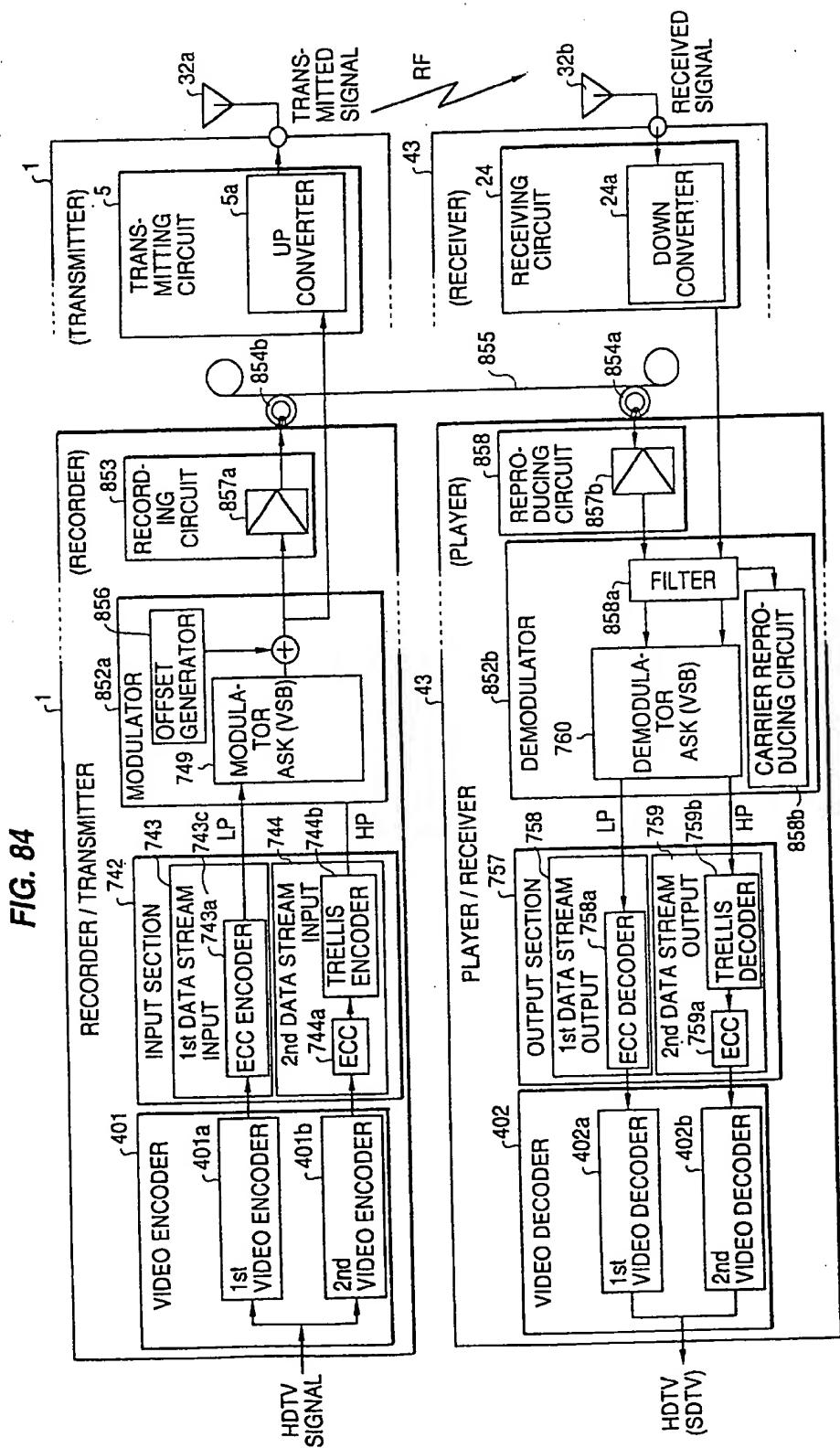


FIG. 85

SIGNAL STATES

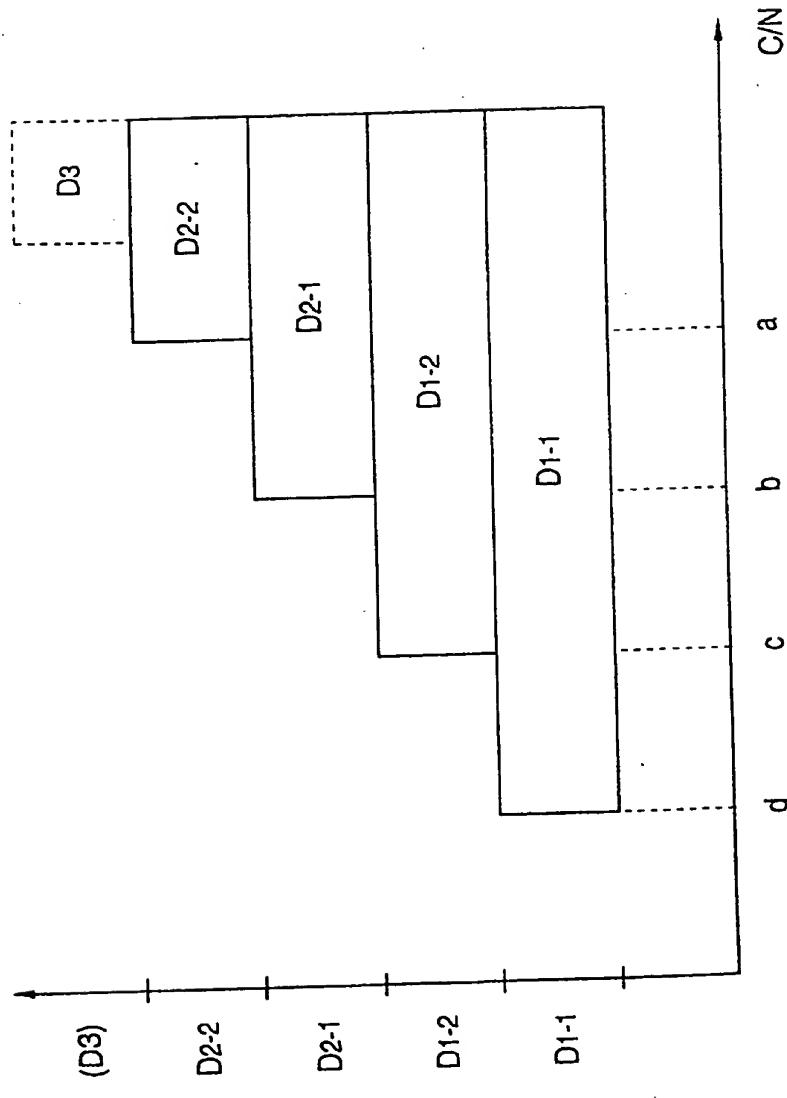


FIG. 86

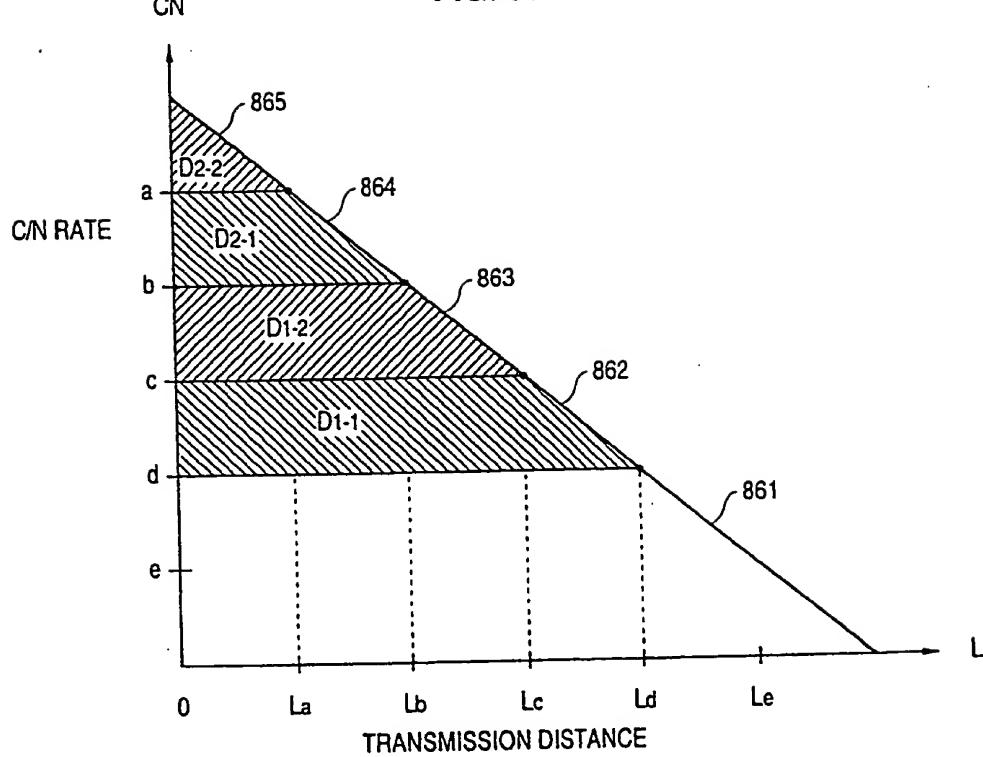


FIG. 87

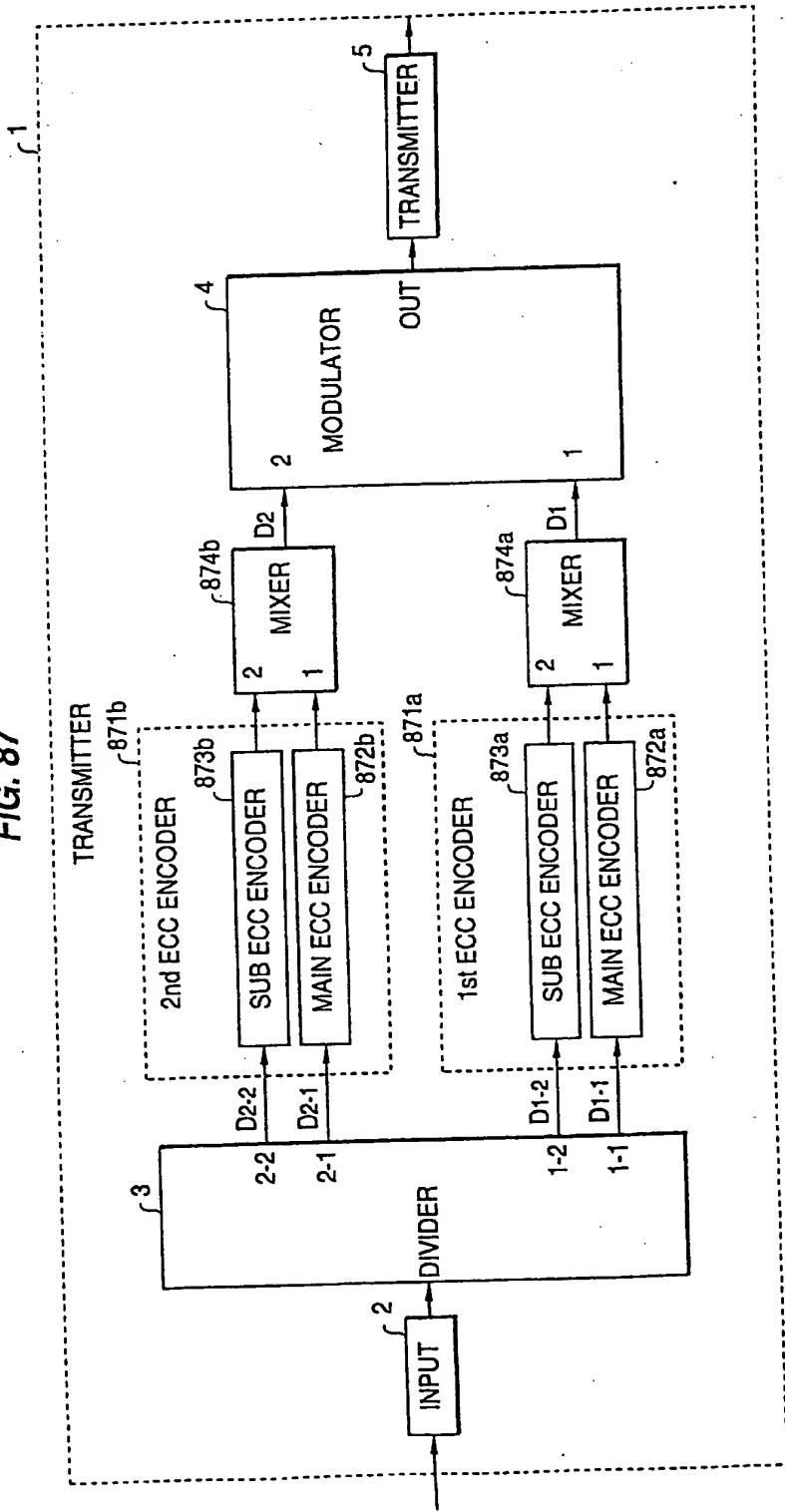


FIG. 88

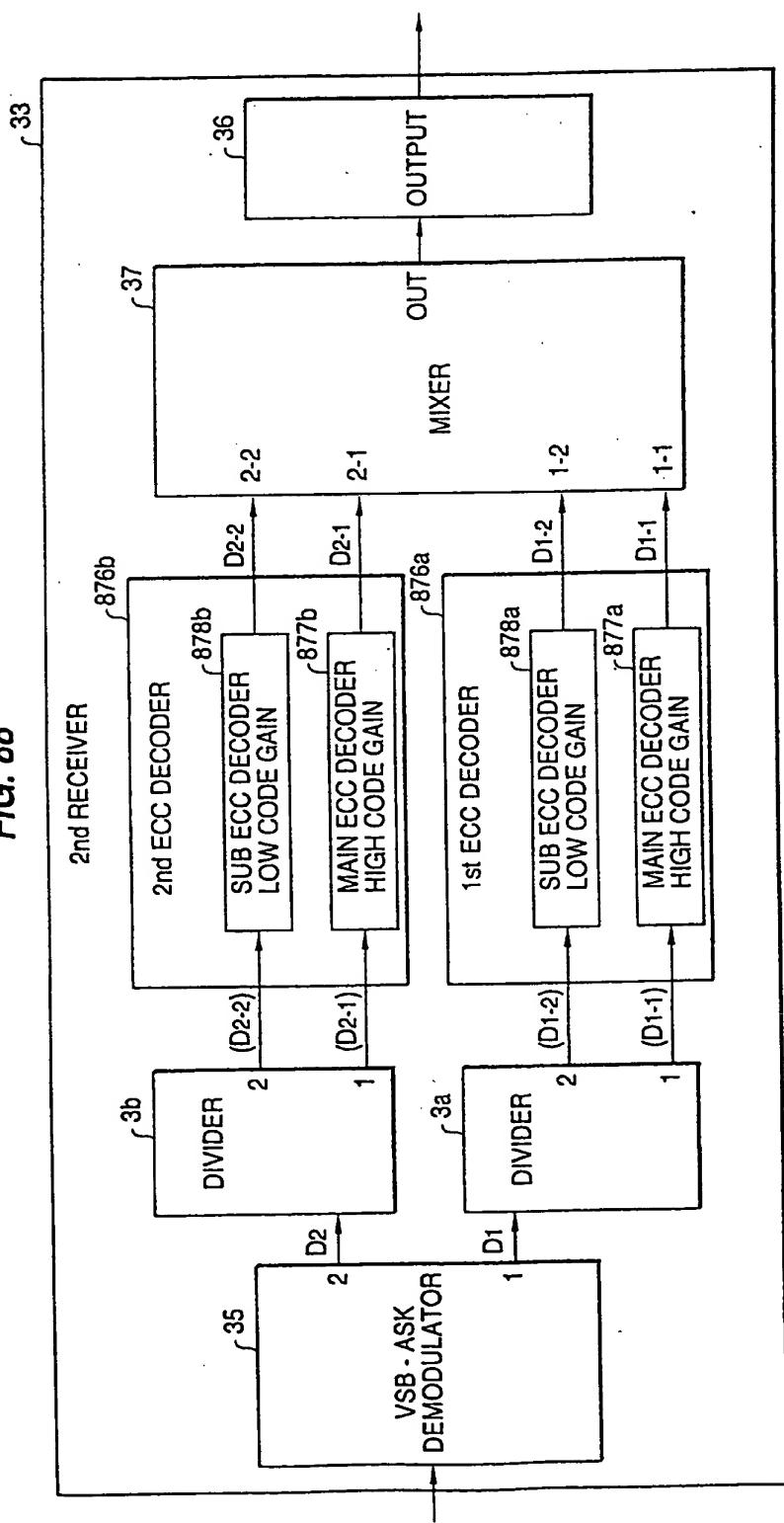
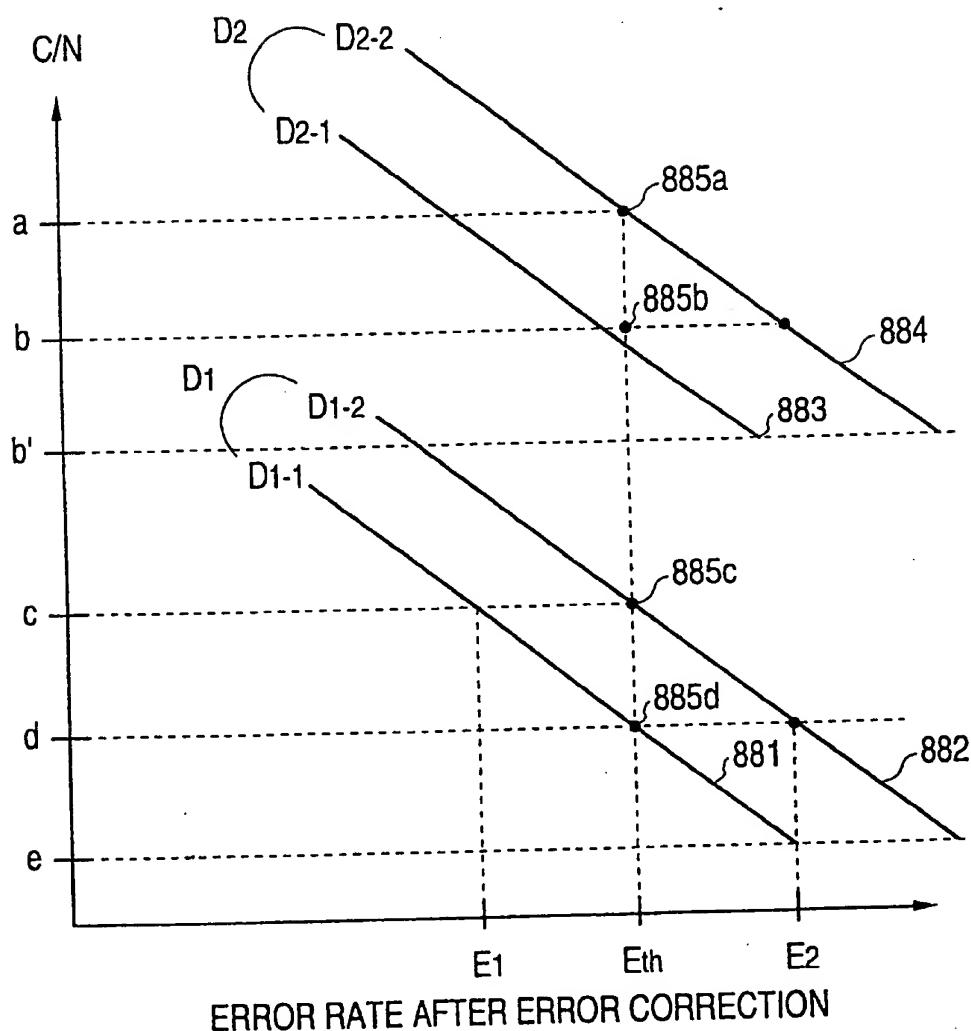


FIG. 89

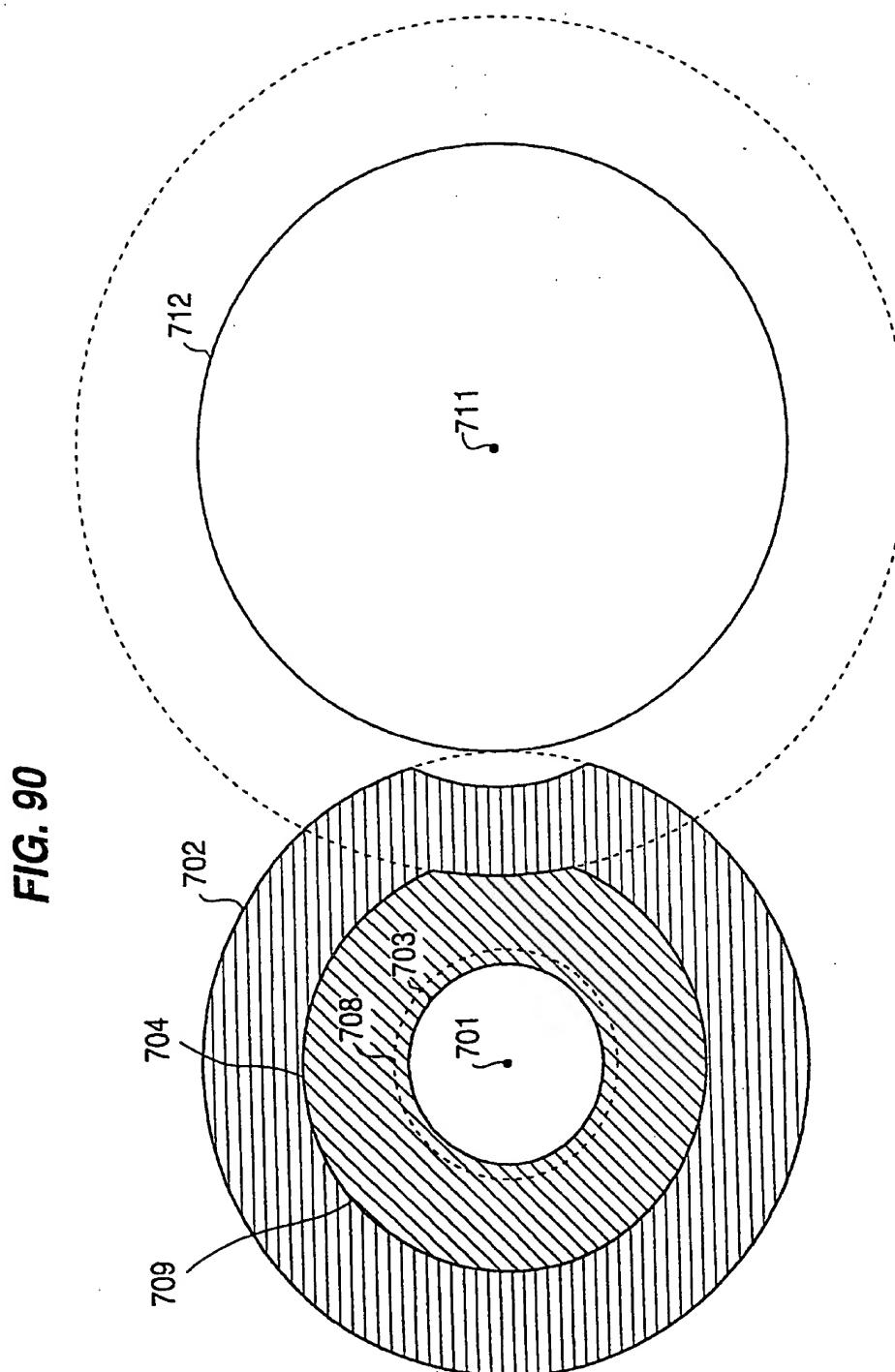


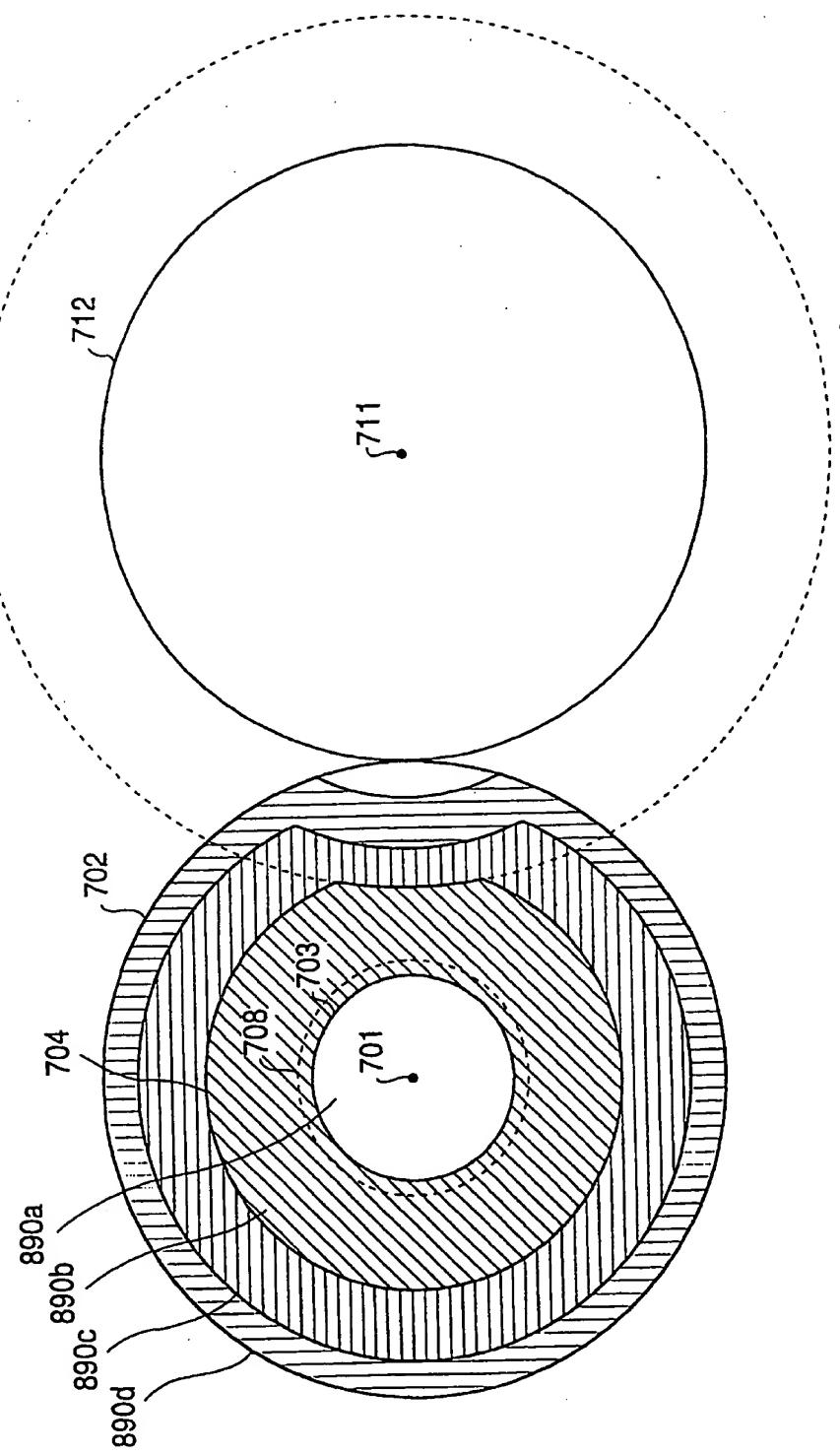
FIG. 91

FIG. 92

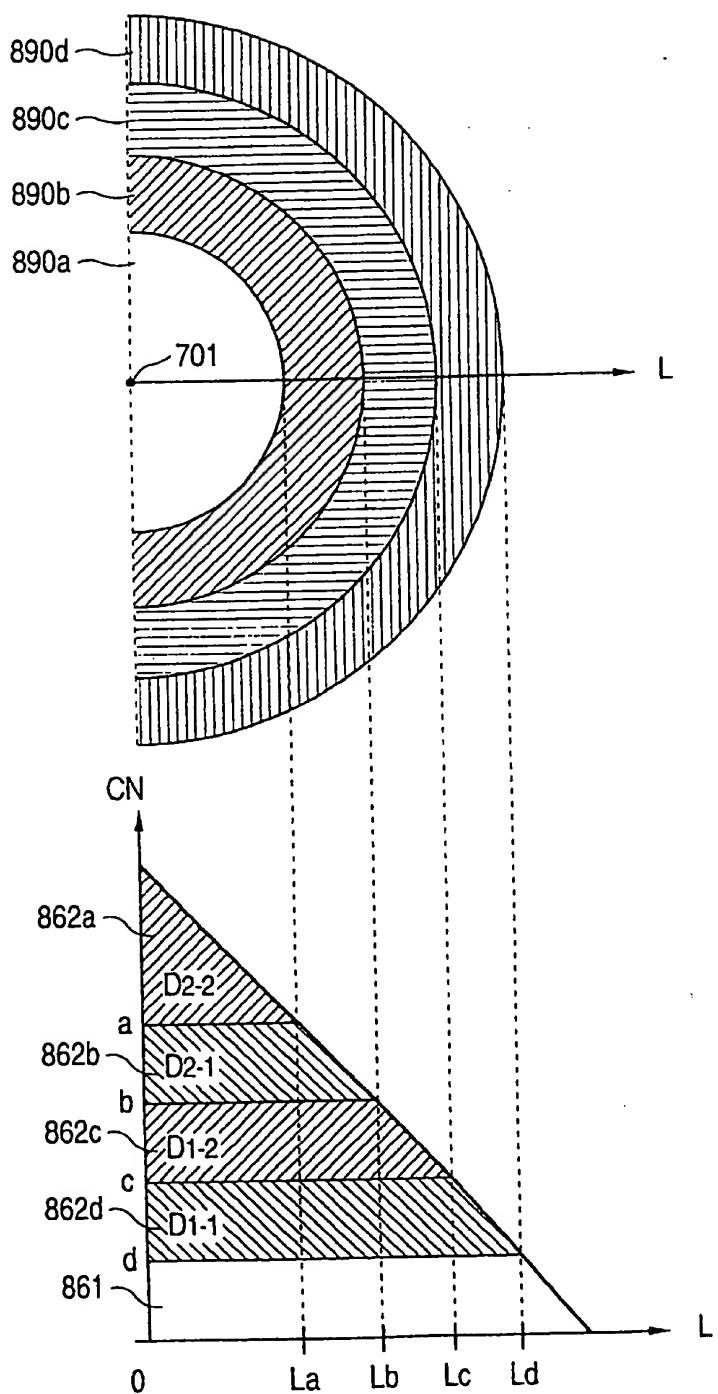


FIG. 93

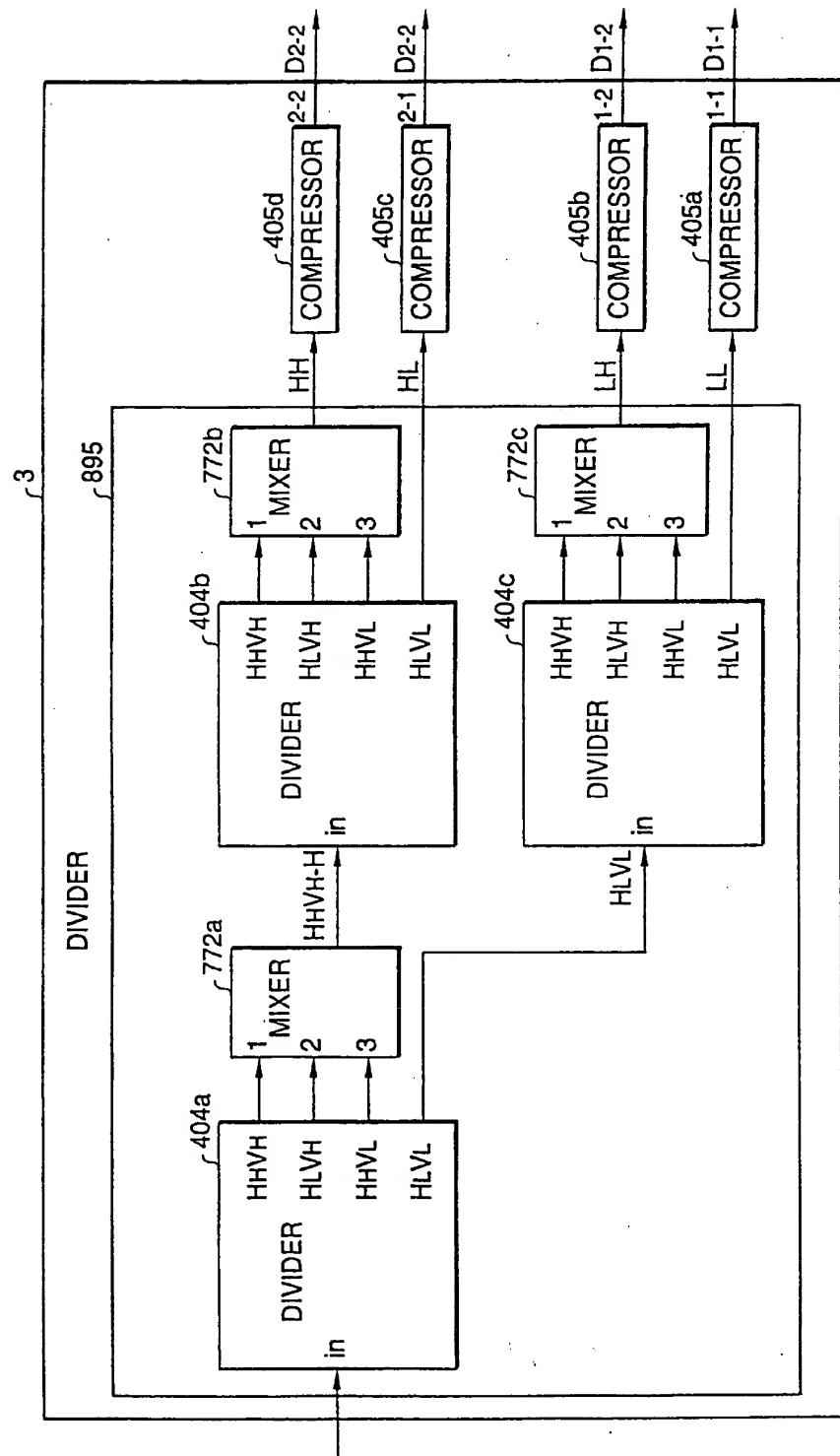


FIG. 94

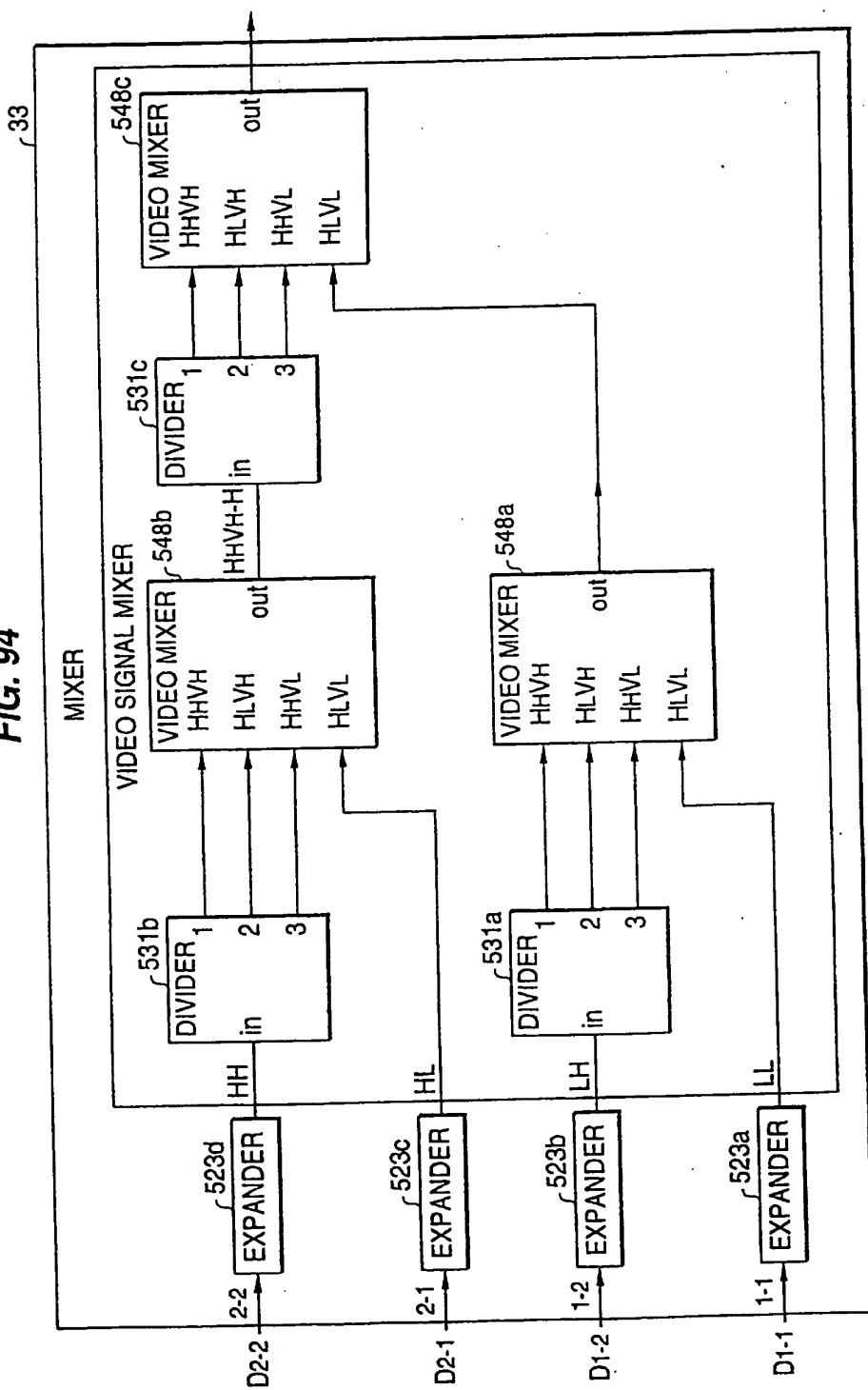


FIG. 95

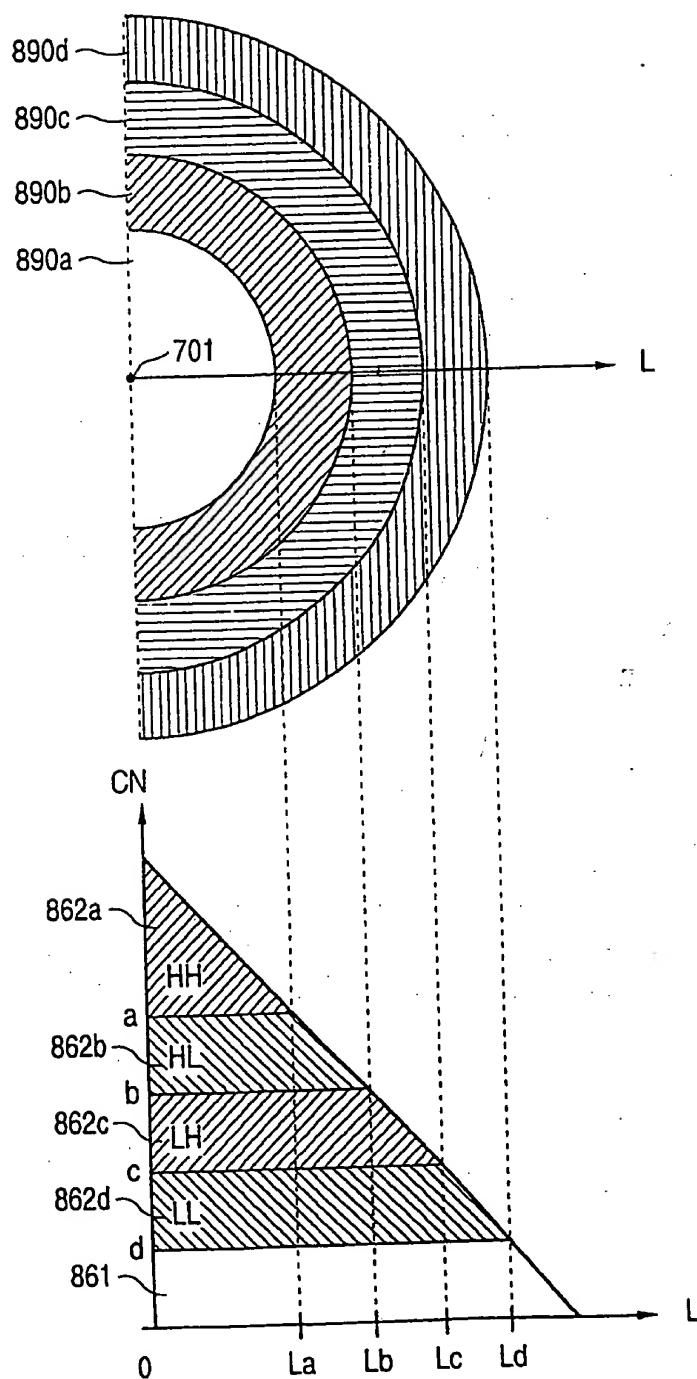


FIG. 96

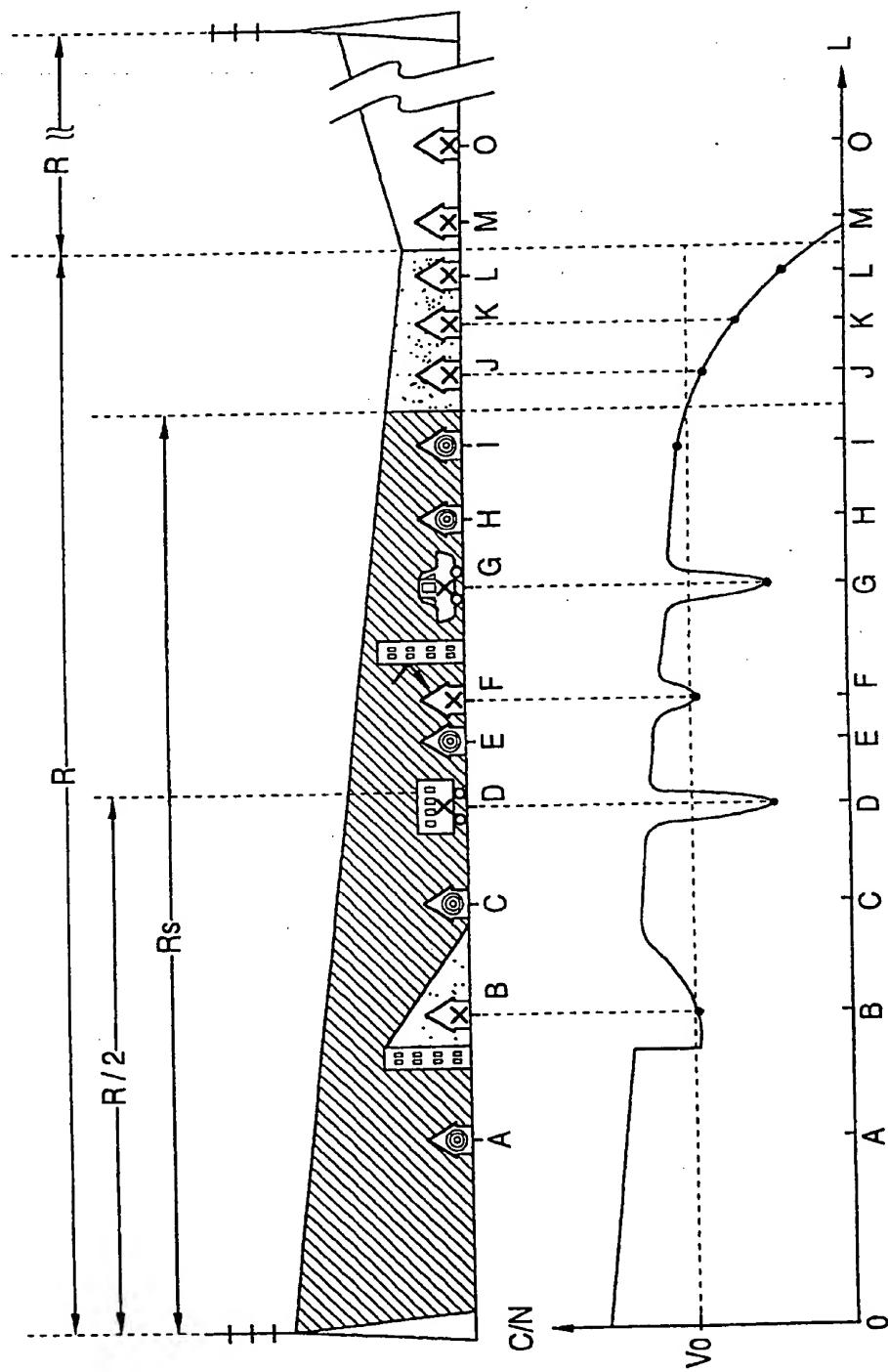


FIG. 97

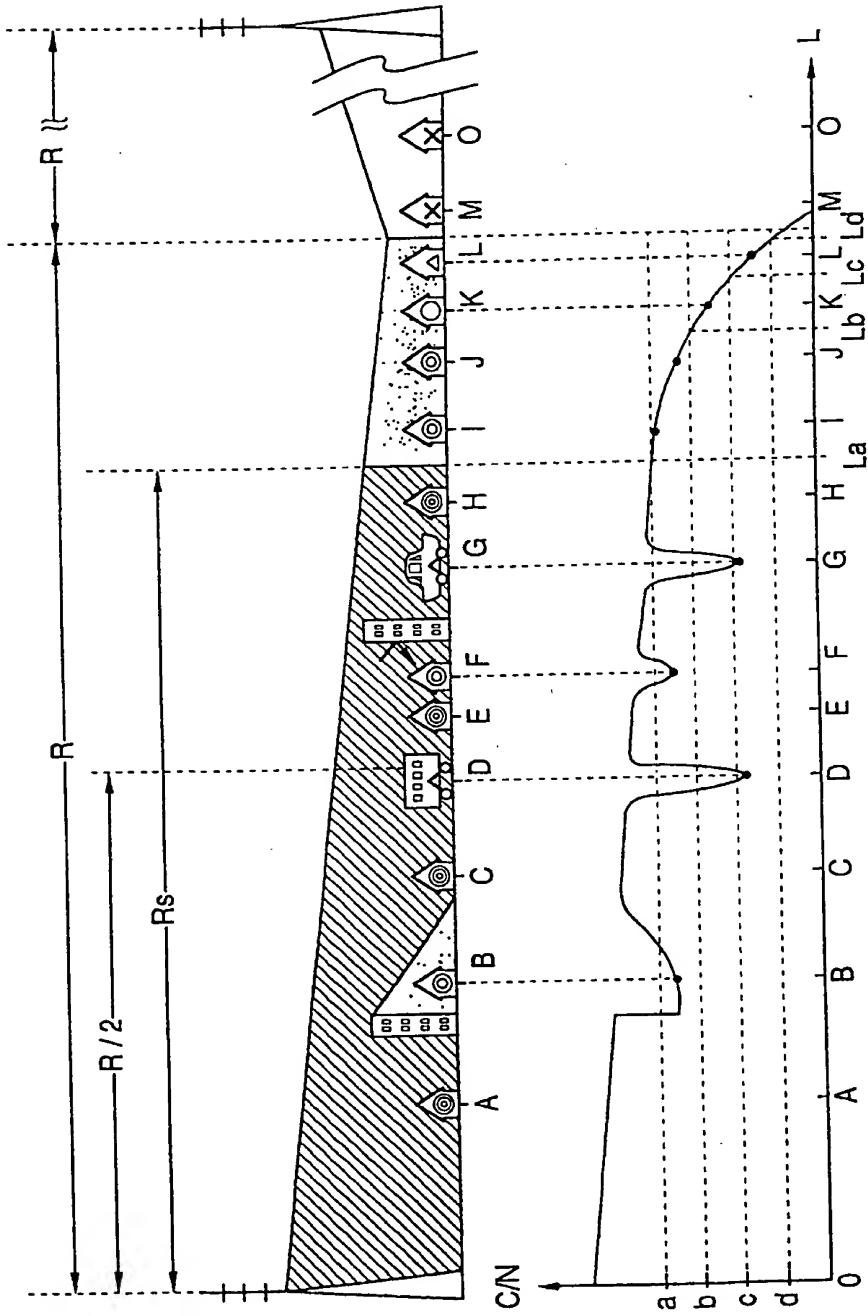


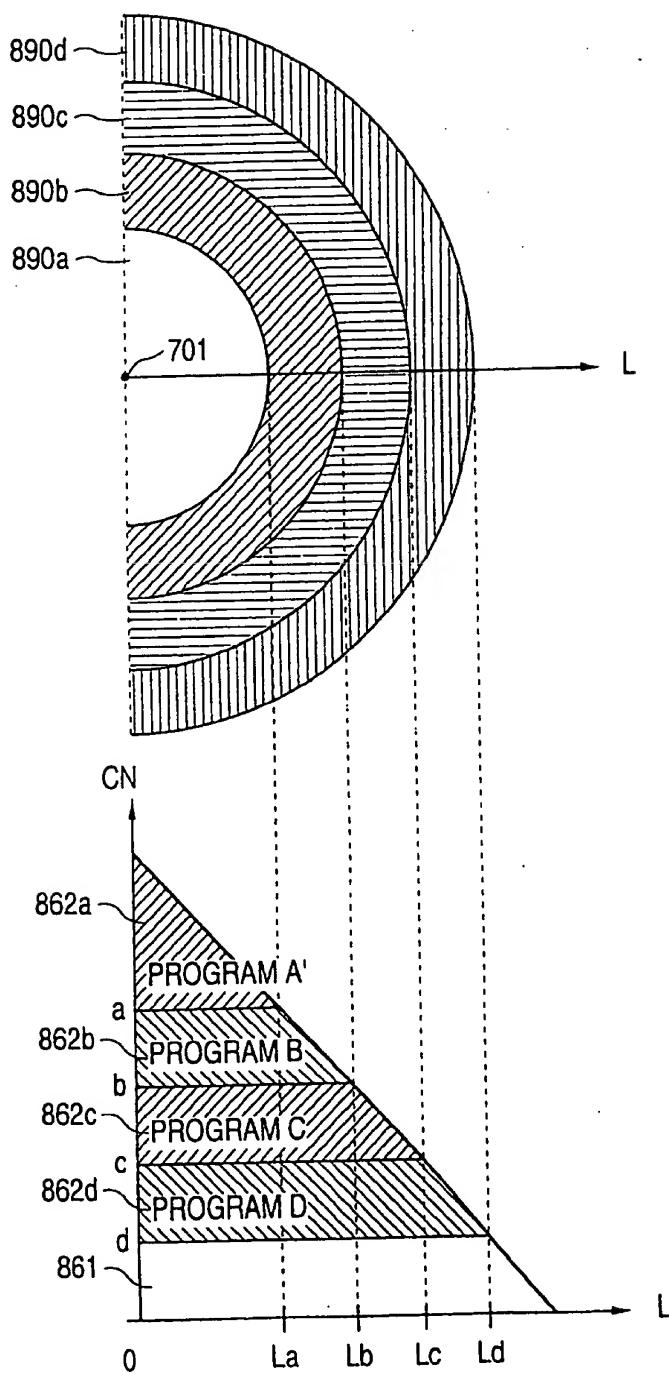
FIG. 98

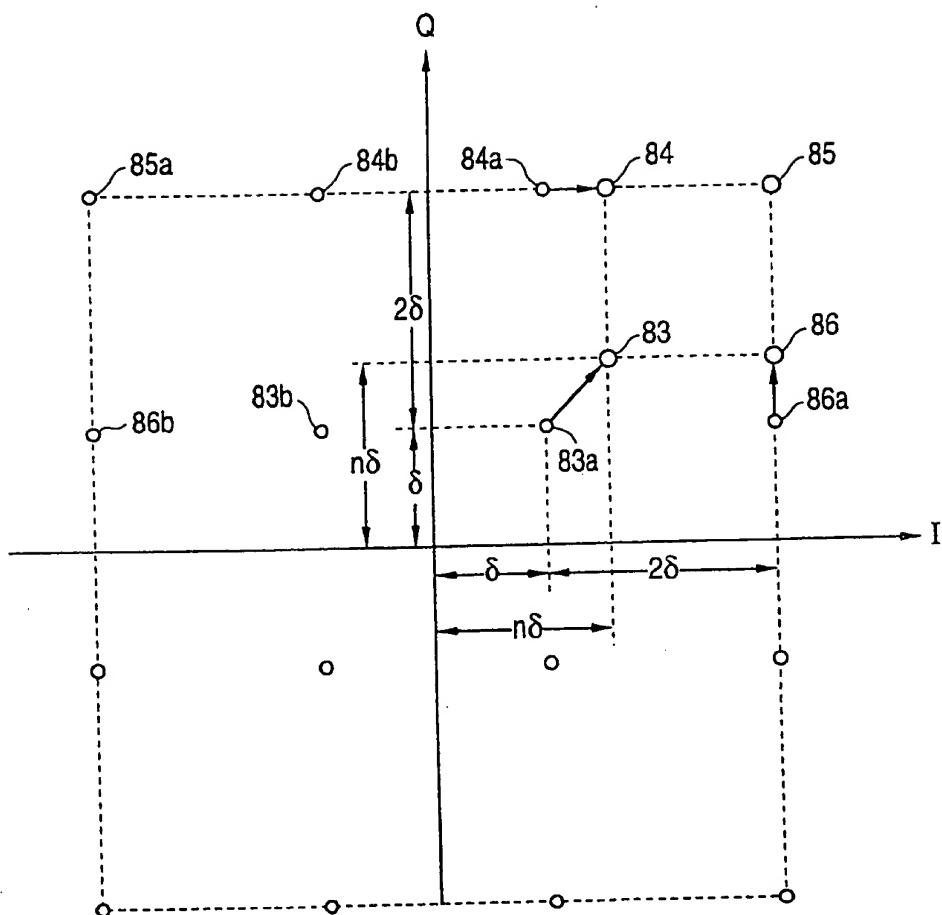
FIG. 99

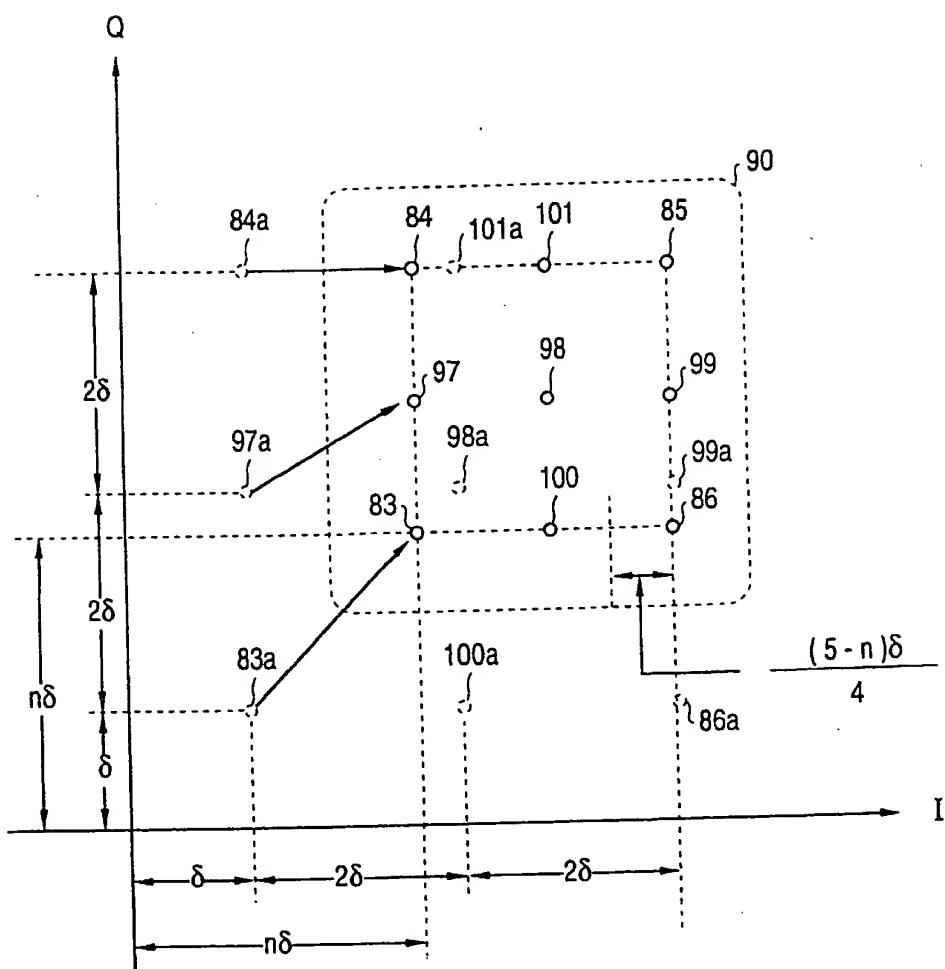
FIG. 100

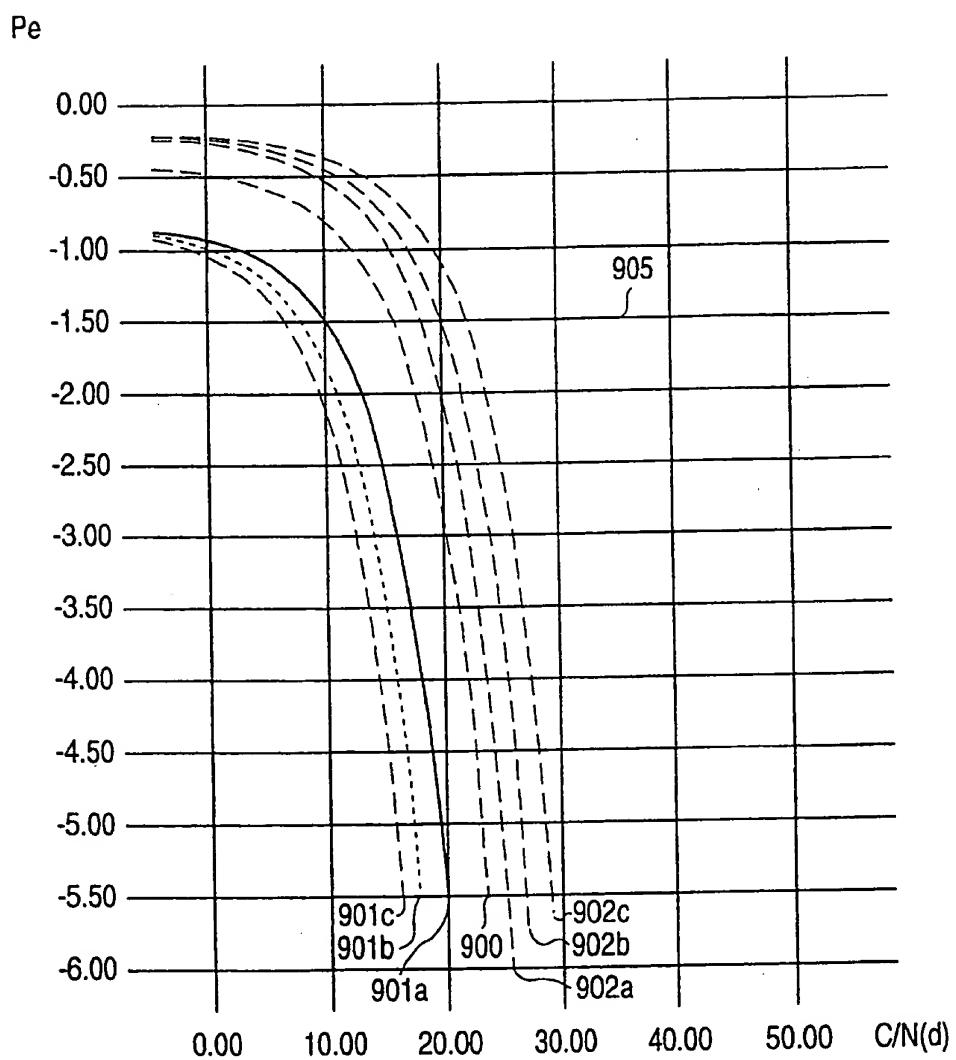
FIG. 101

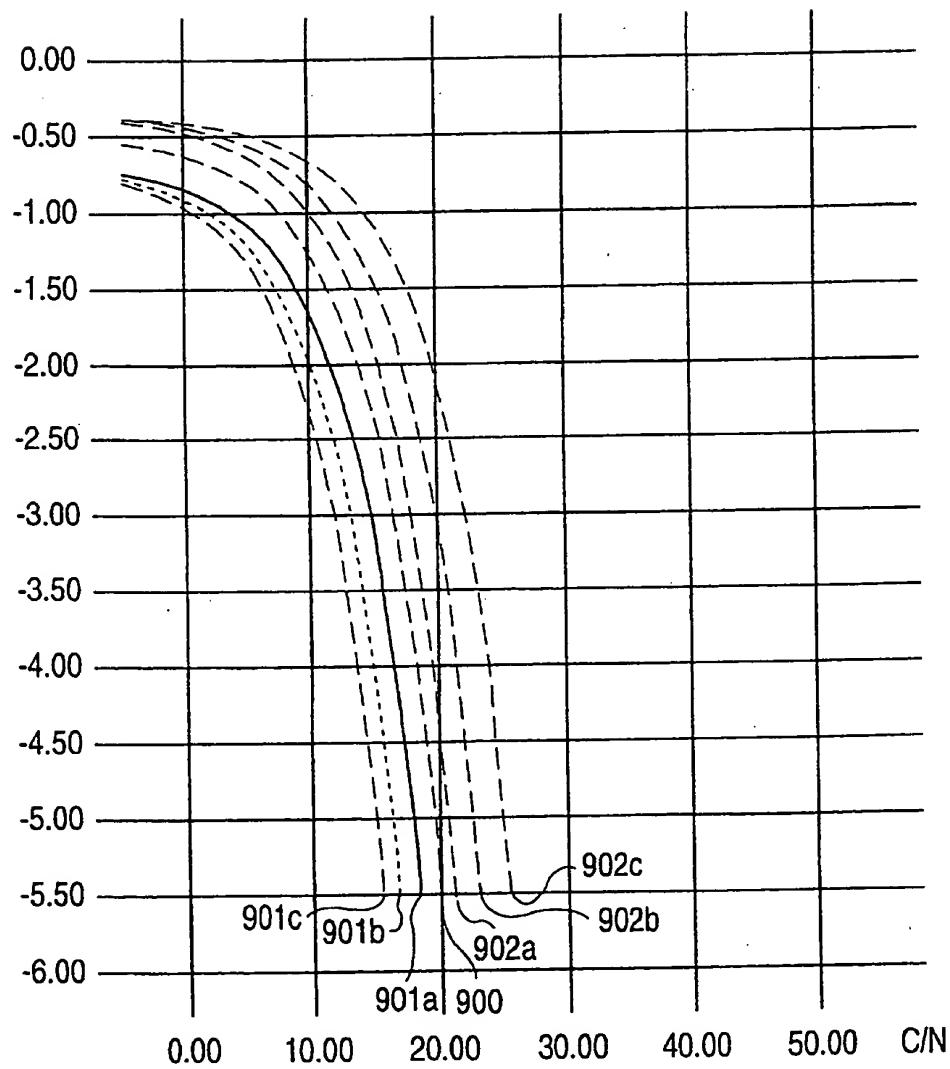
FIG. 102 P_e 

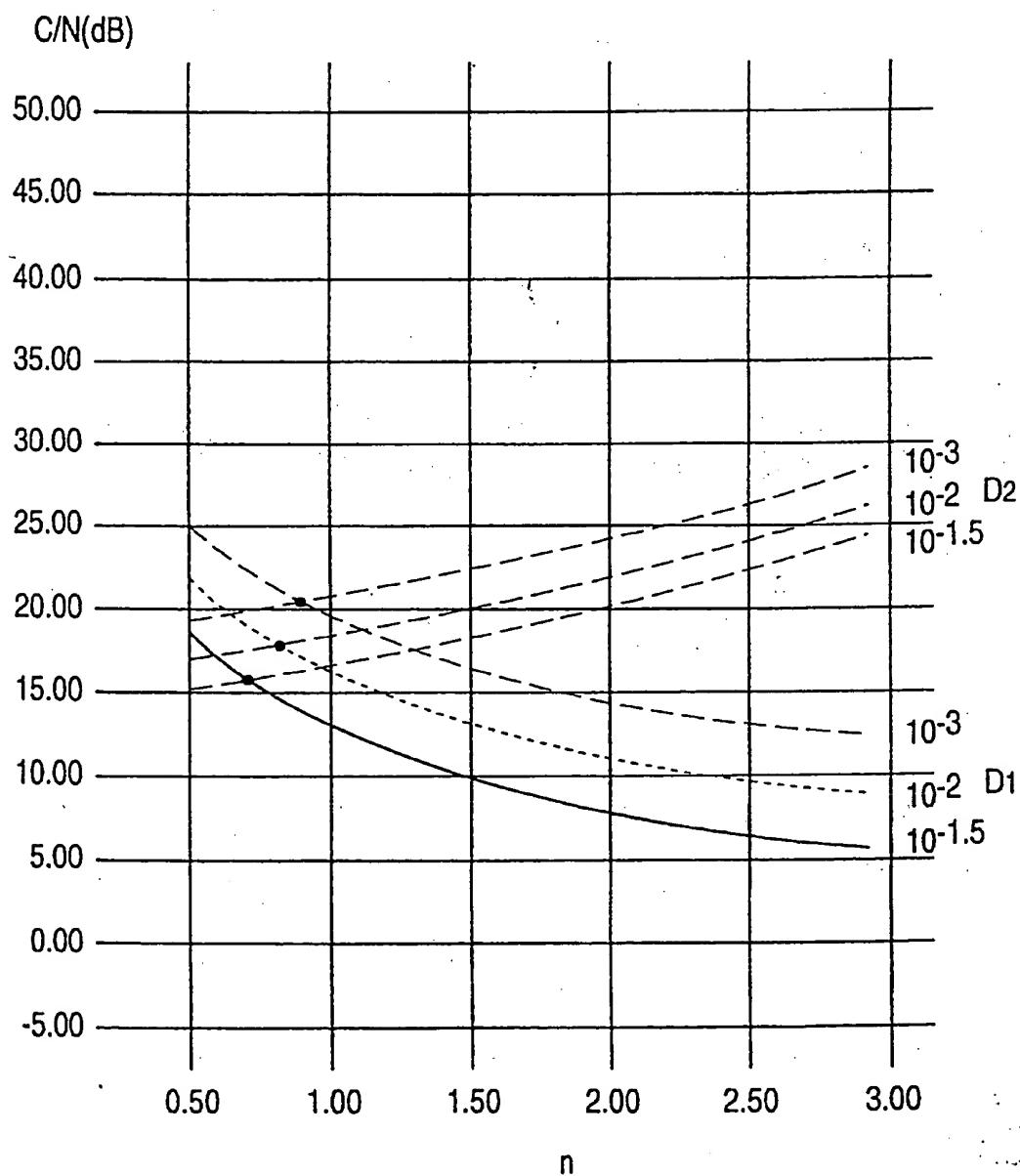
FIG. 103

FIG. 104

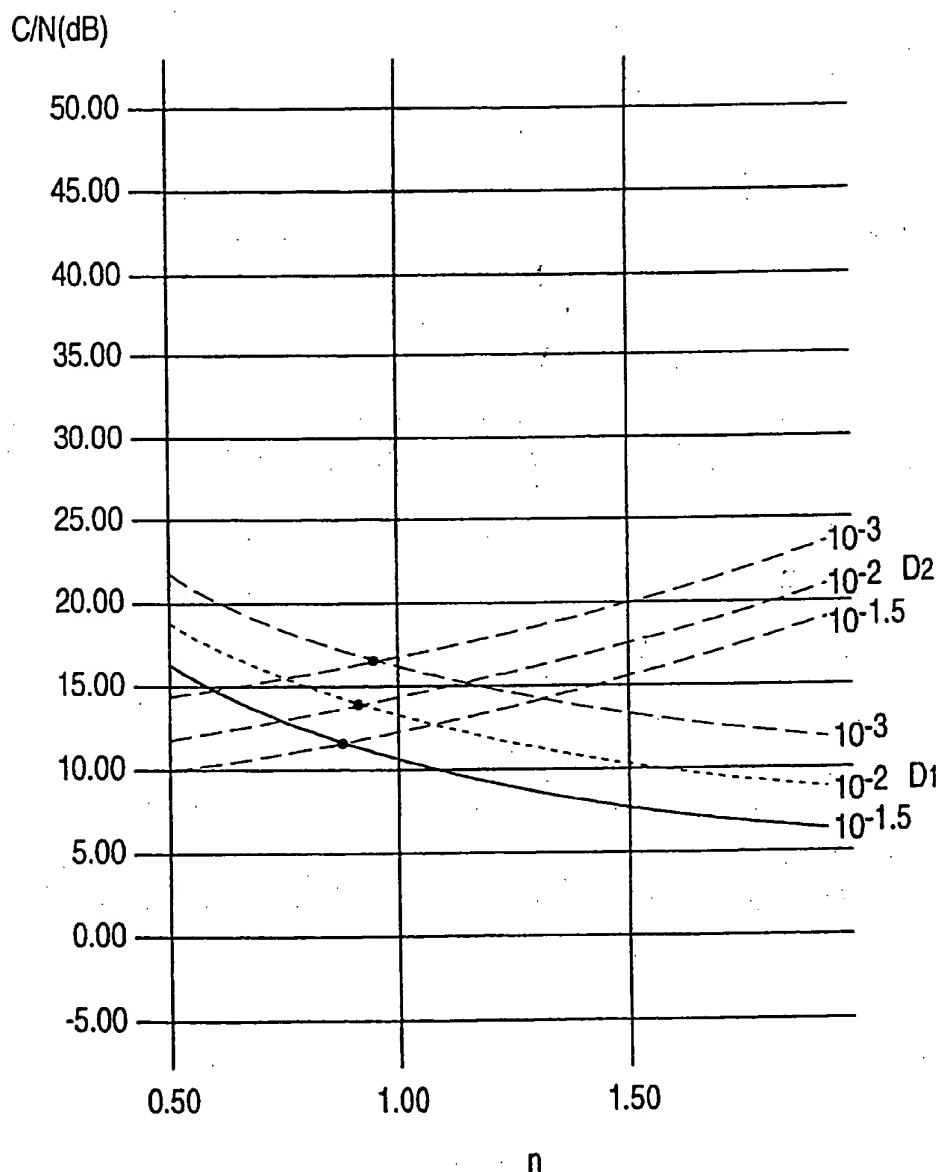


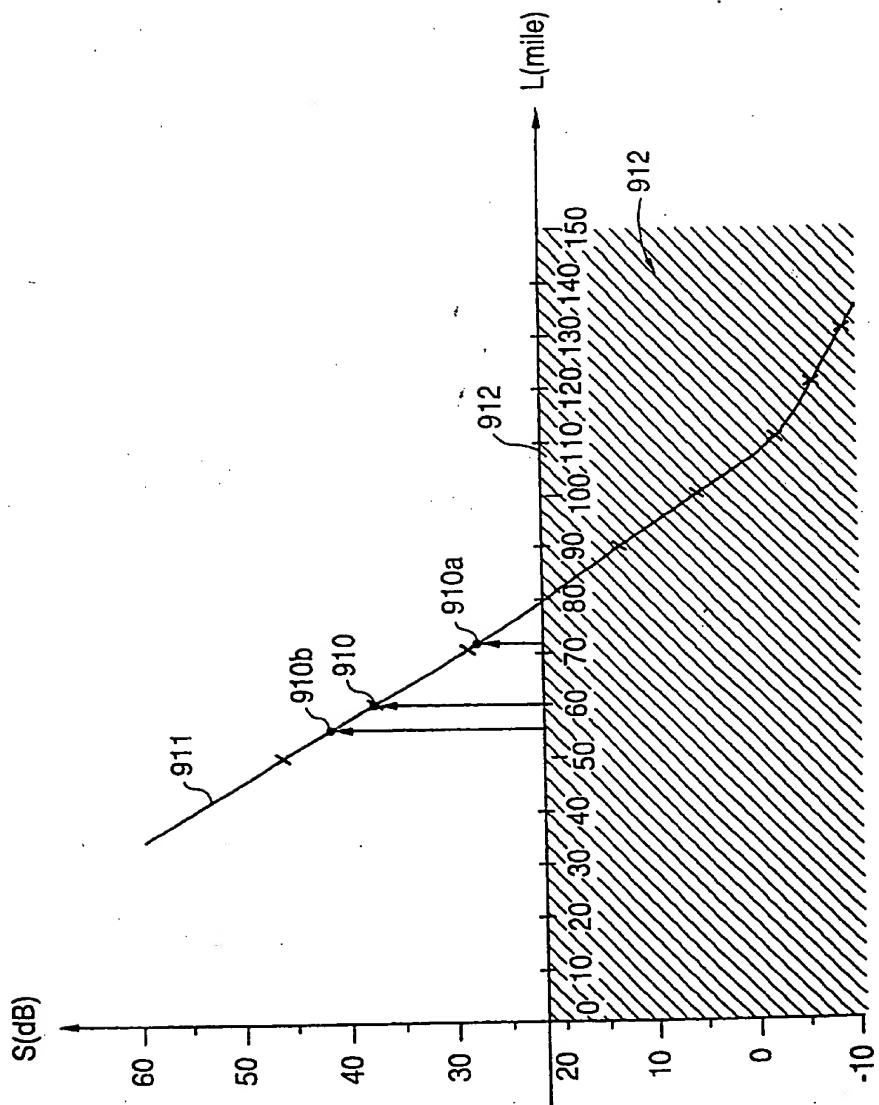
FIG. 105

FIG. 106

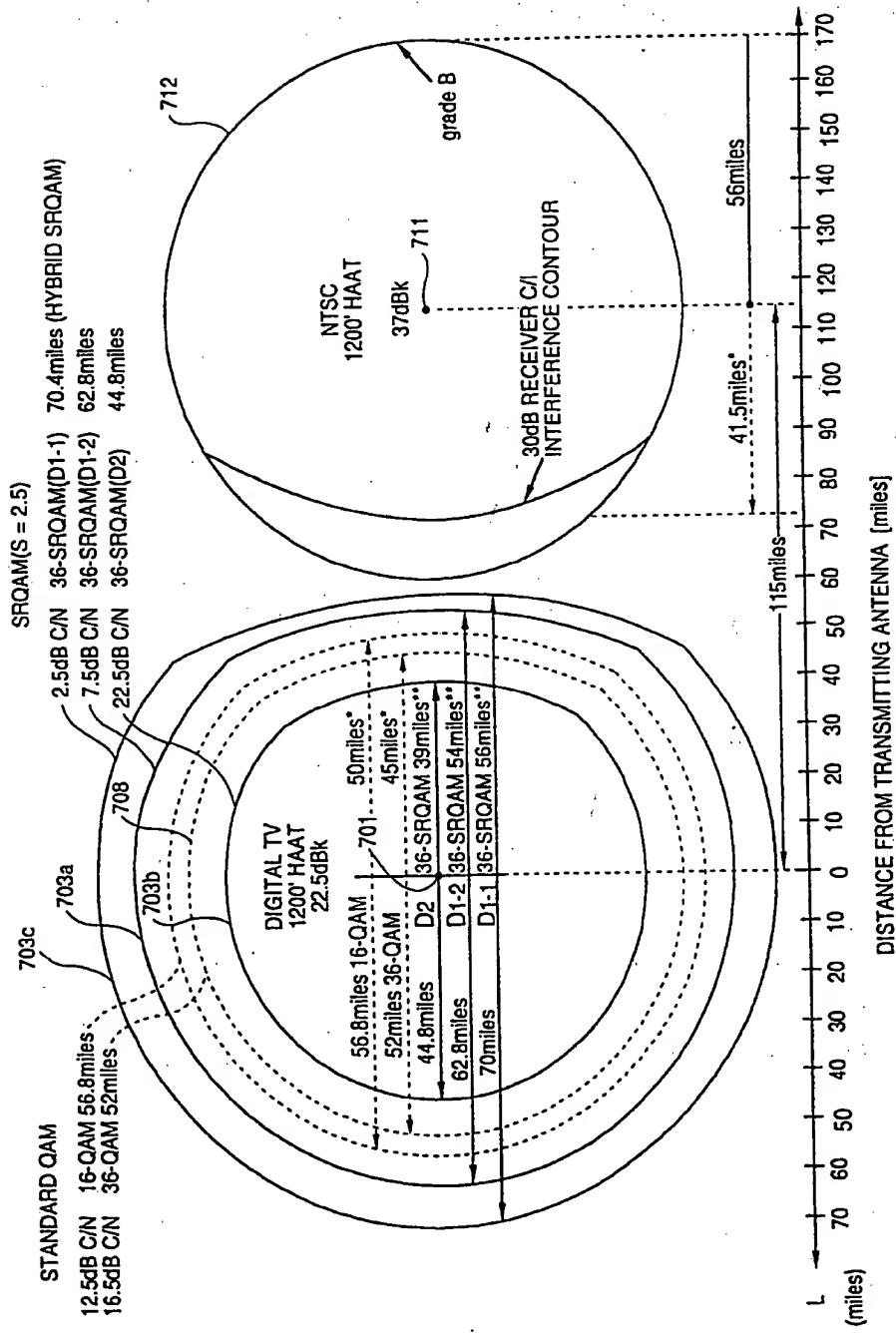


FIG. 107

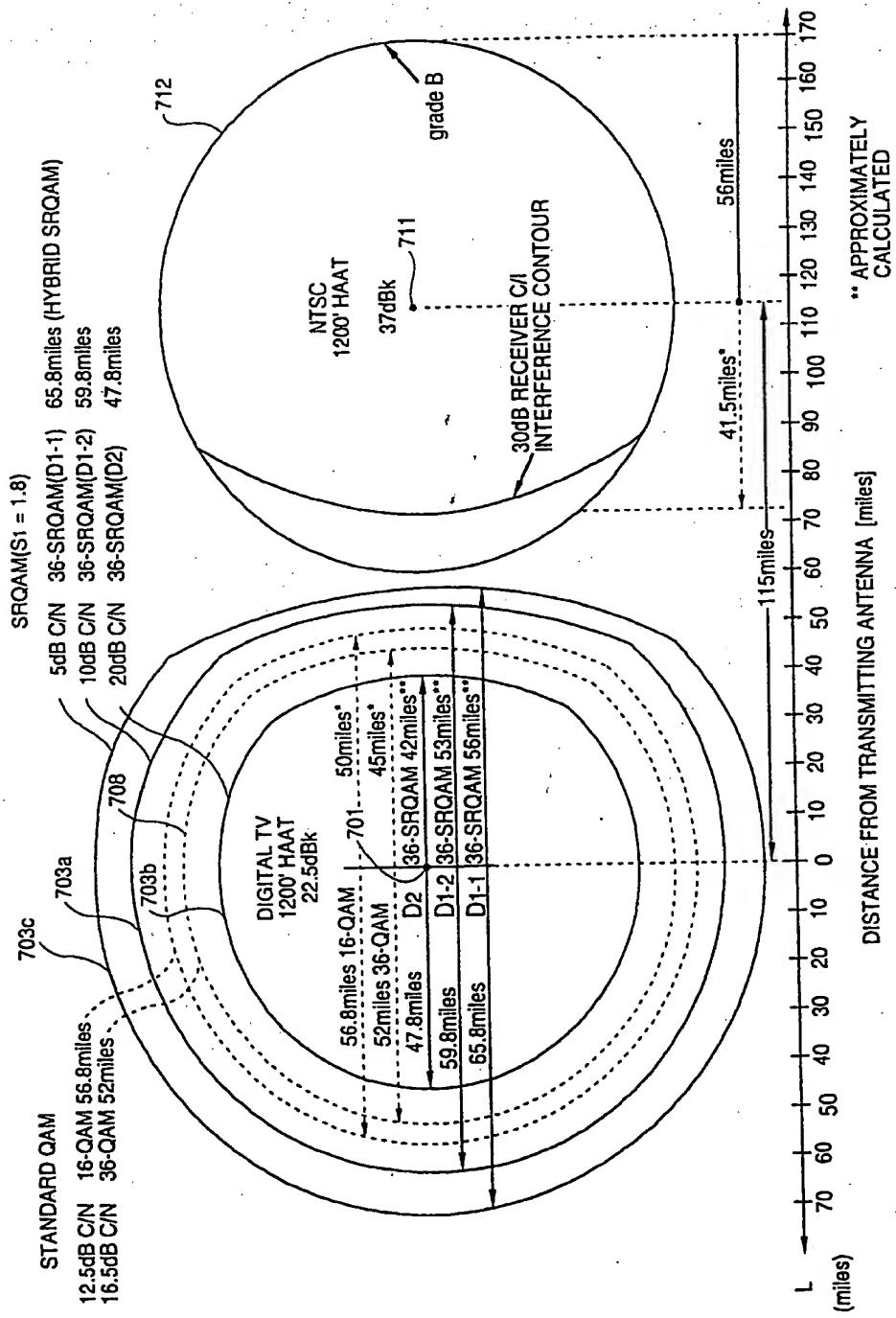


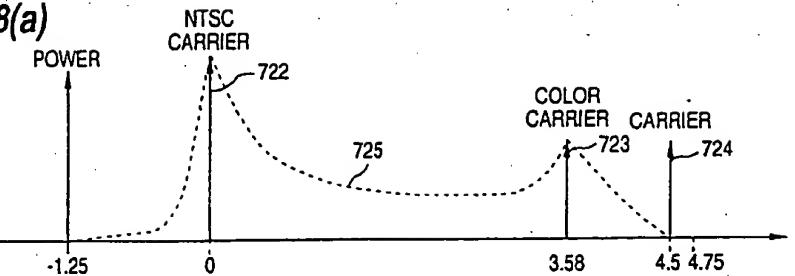
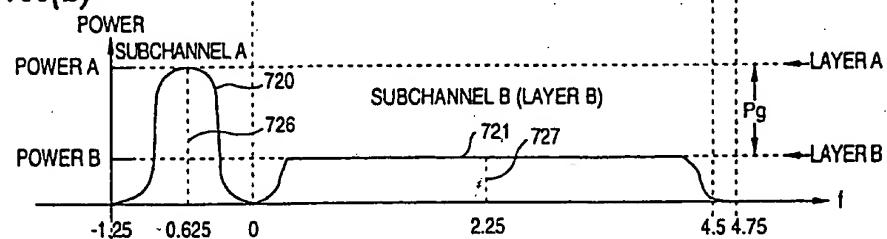
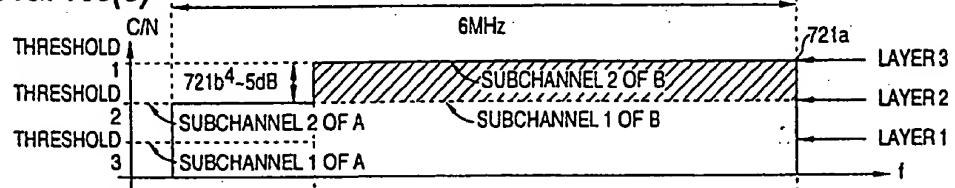
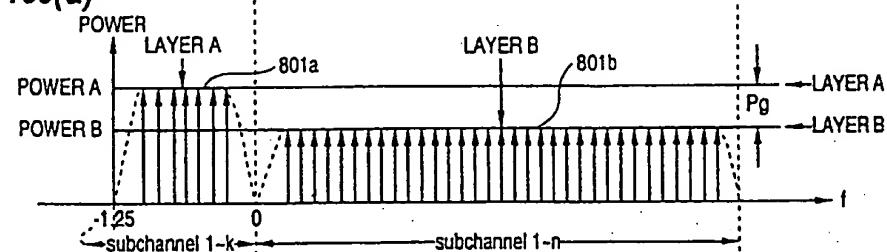
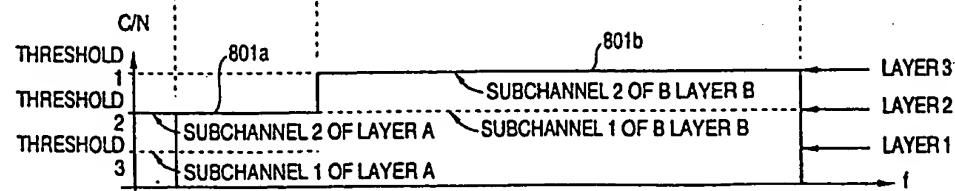
FIG. 108(a)**FIG. 108(b)****FIG. 108(c)****FIG. 108(d)****FIG. 108(e)**

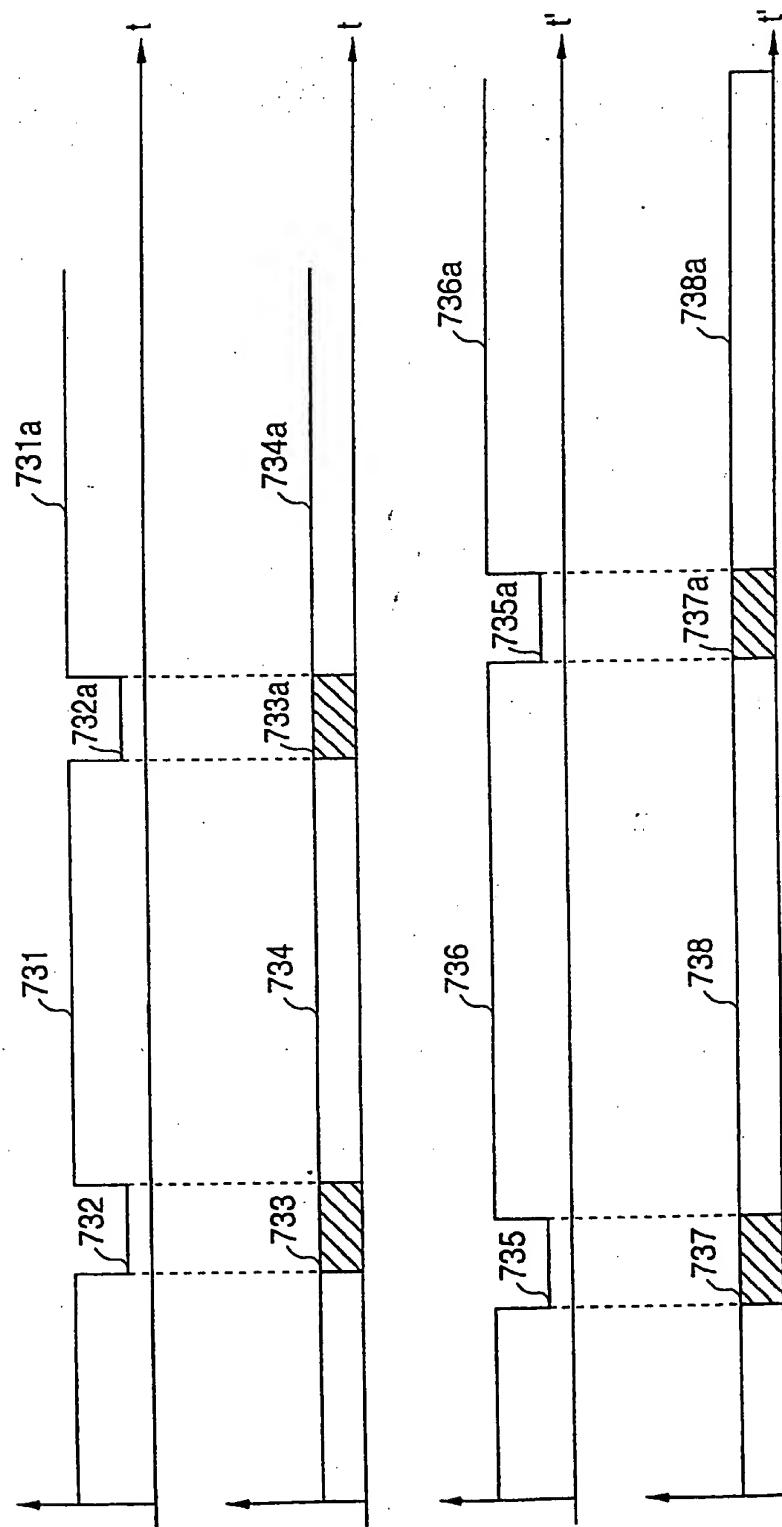
FIG. 109

FIG. 110

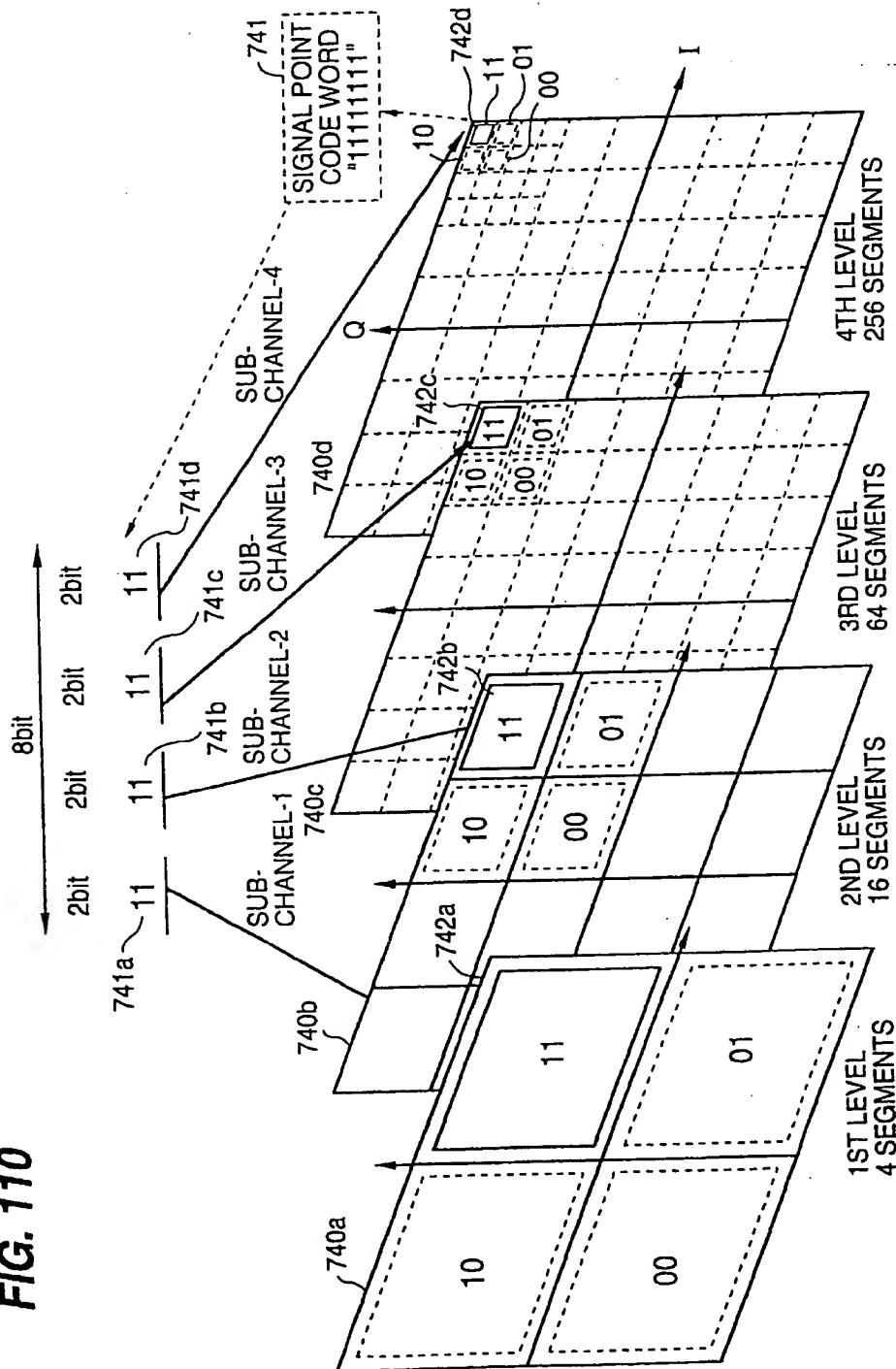
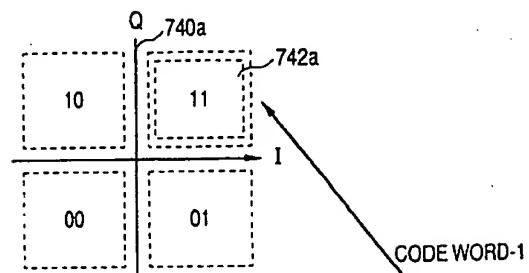
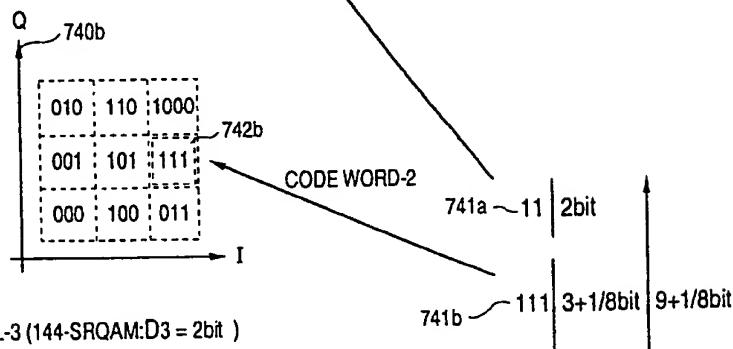


FIG. 111

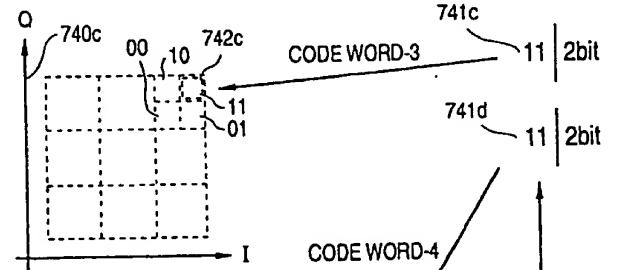
SUBCHANNEL-1 (SRQAM:D1 = 2bit)



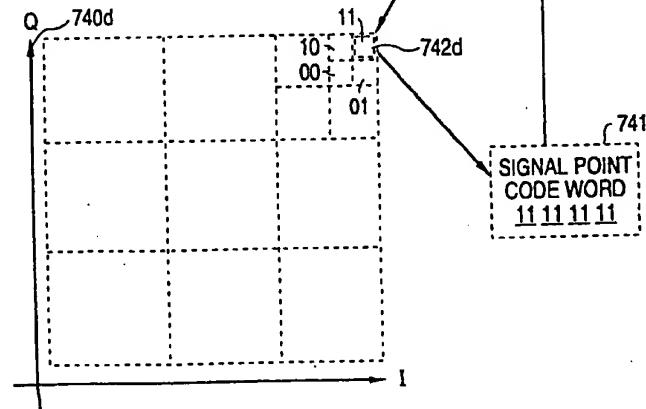
SUBCHANNEL-2 (36-SRQAM:D2 = 3bit + 1/8bit)



SUBCHANNEL-3 (144-SRQAM:D3 = 2bit)



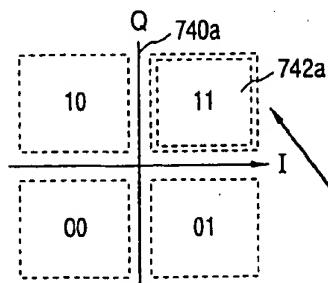
SUBCHANNEL-4 (576-SRQAM:D4 = 2bit)



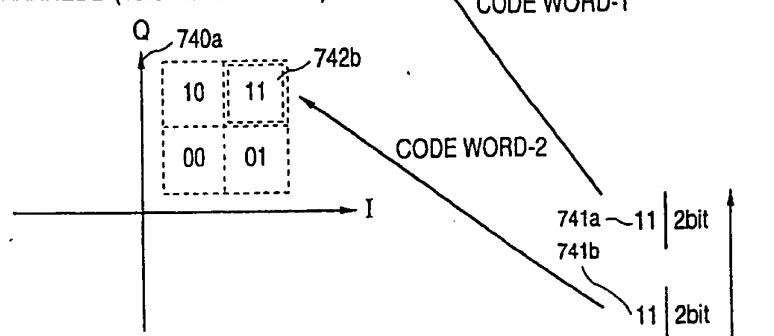
SIGNAL POINT
CODE WORD
11 11 11 11

FIG. 112

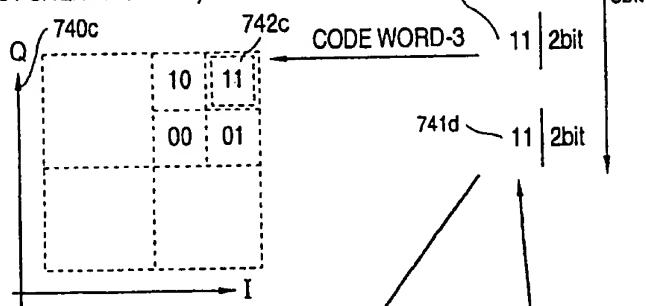
SUBCHANNEL-1 (SRQAM:D1 = 2bit)



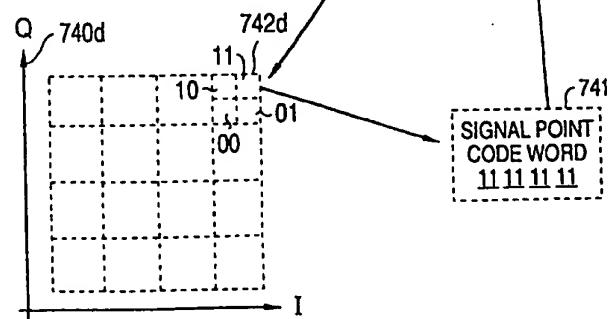
SUBCHANNEL-2 (16-SRQAM:D2 = 2bit)



SUBCHANNEL-3 (64-SRQAM:D3 = 2bit)



SUBCHANNEL-4 (256-SRQAM:D4 = 2bit)



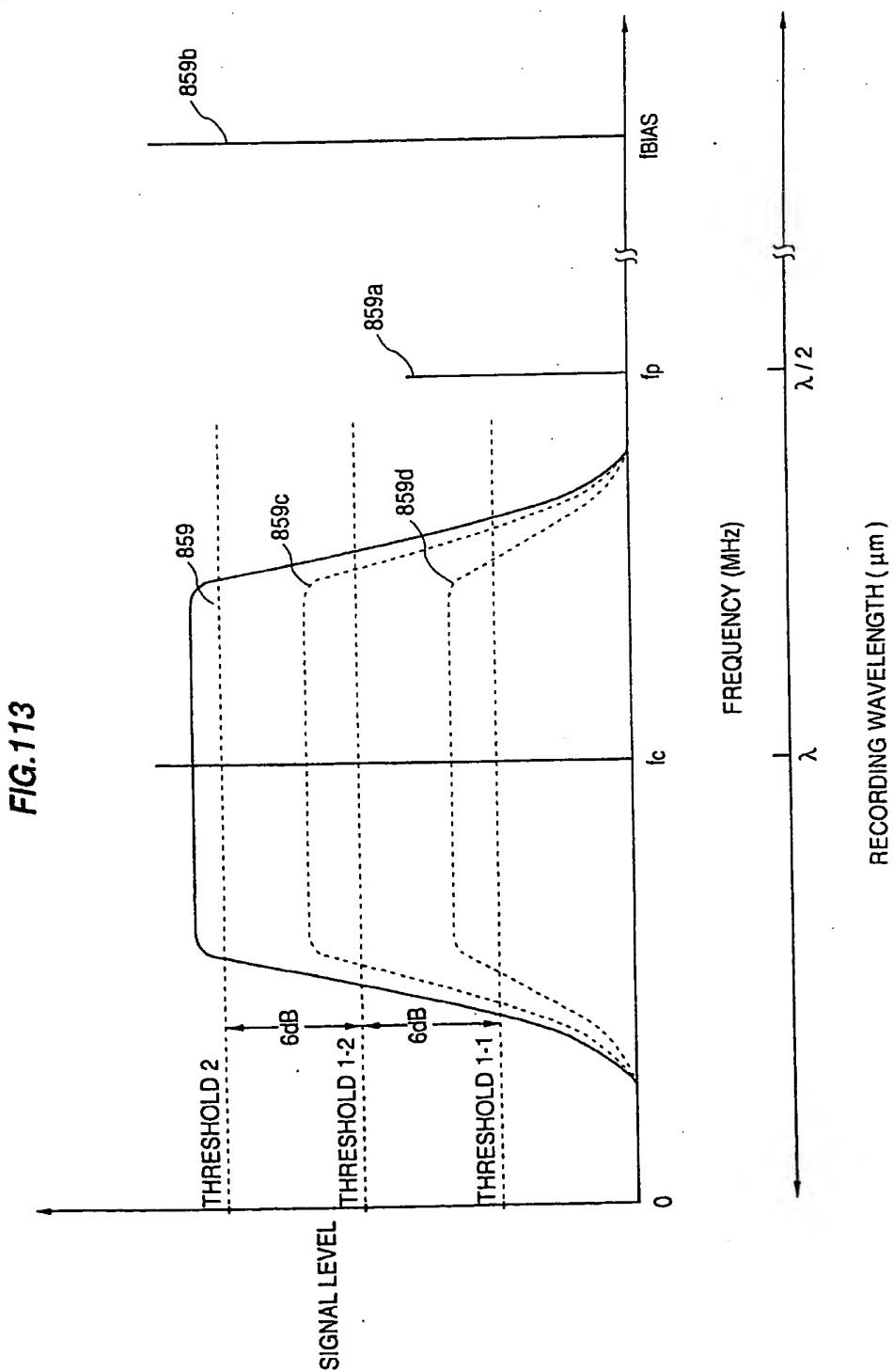


FIG. 114

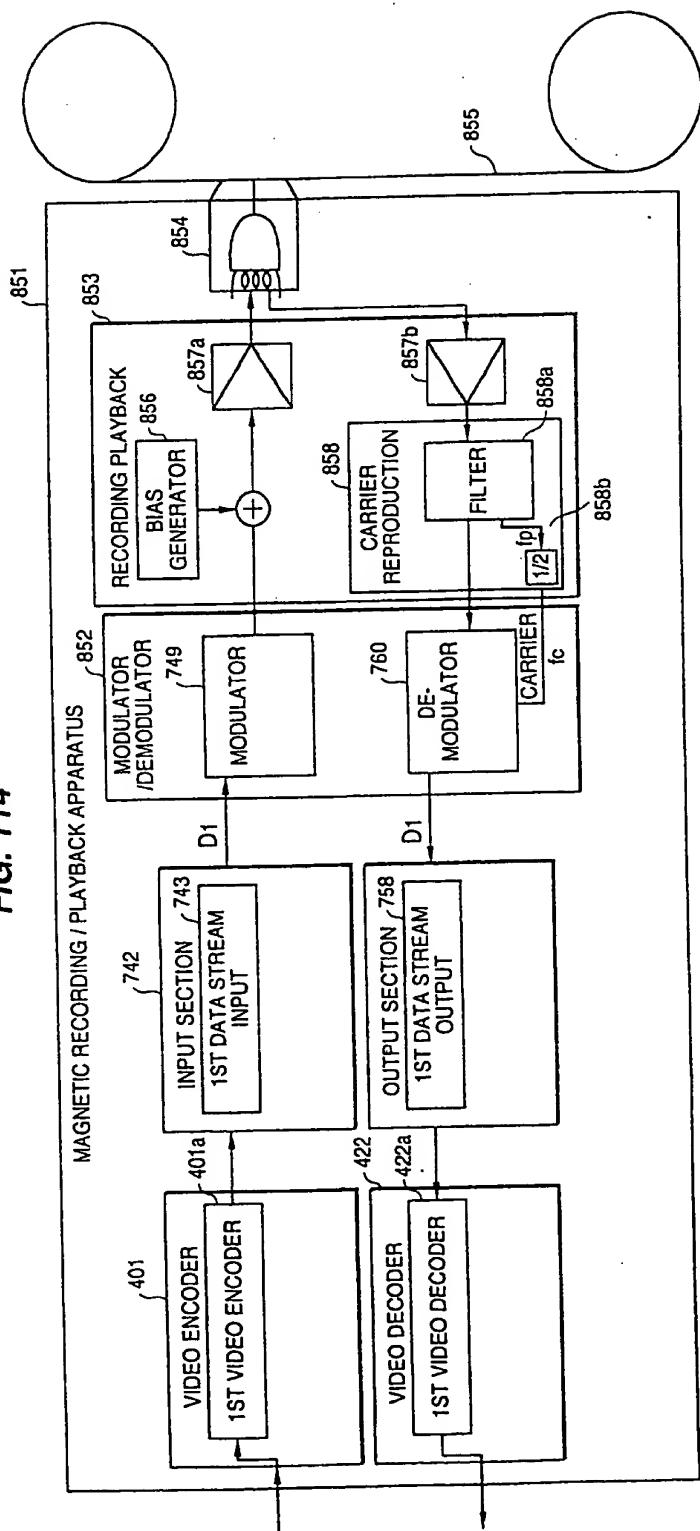
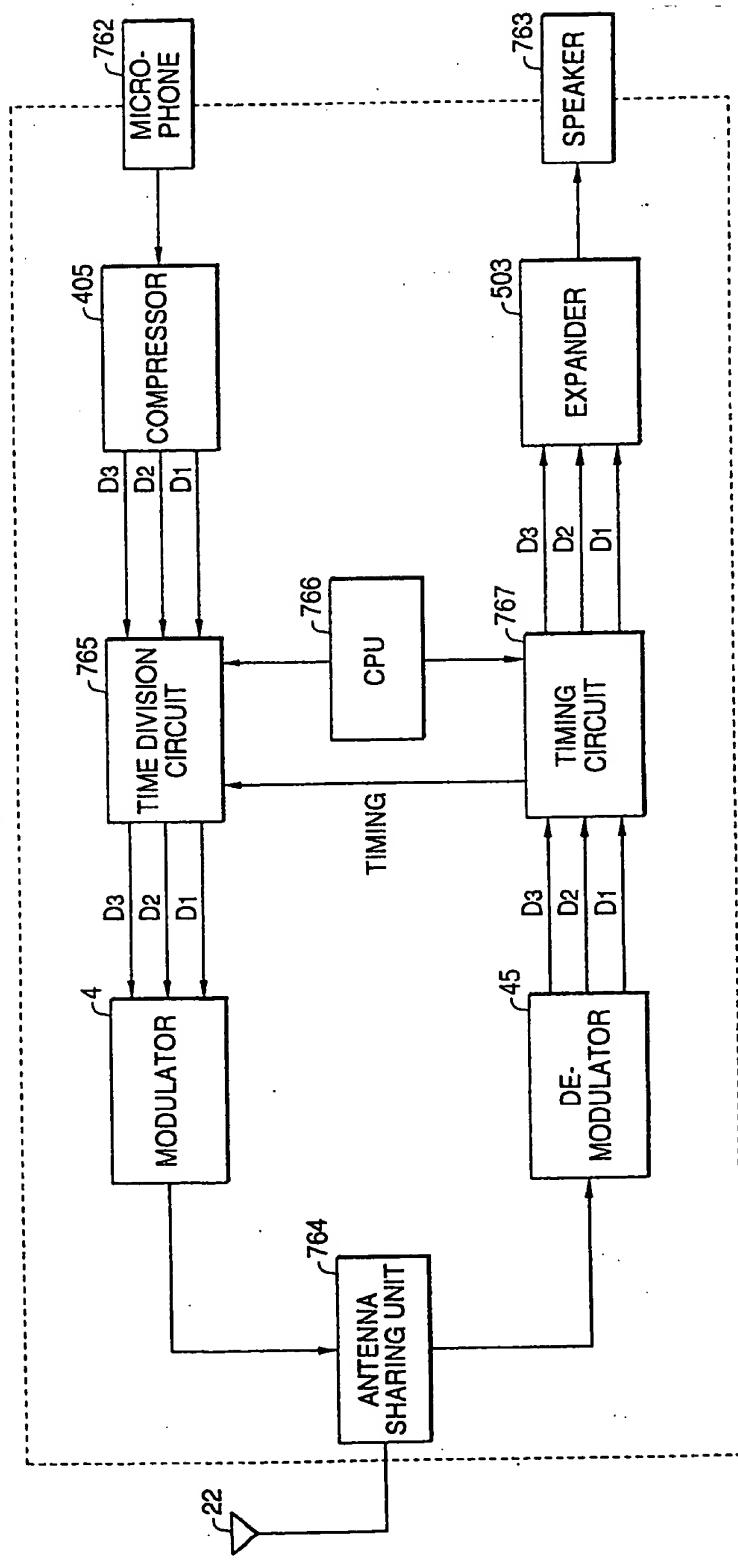
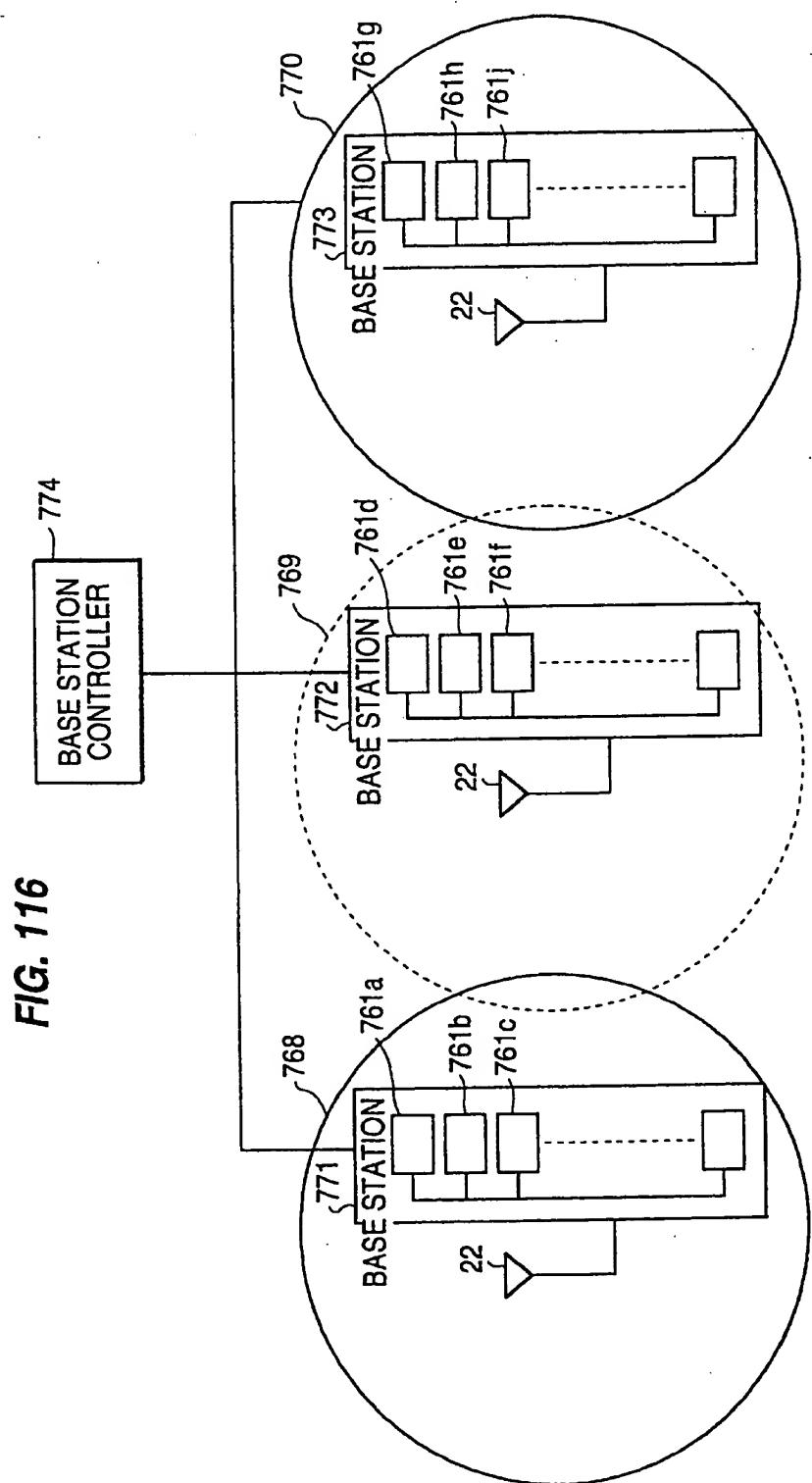
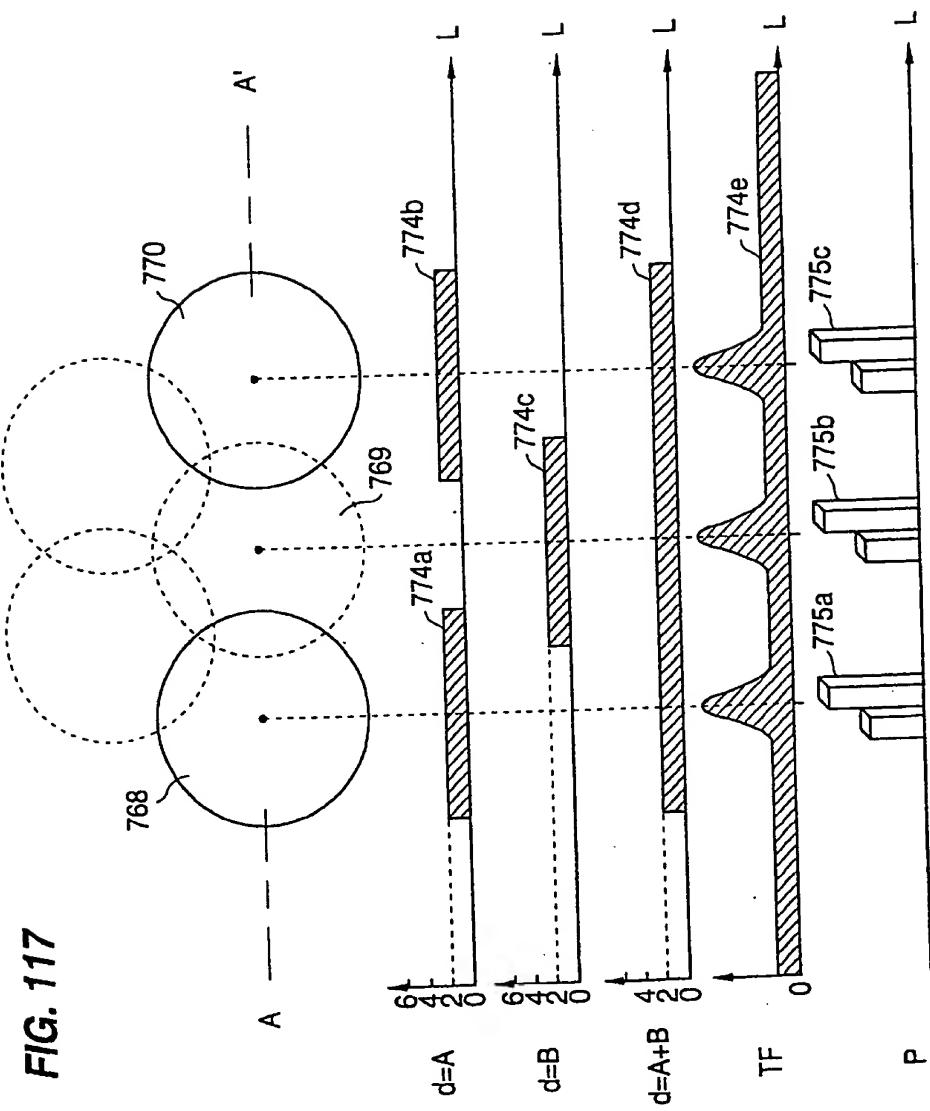
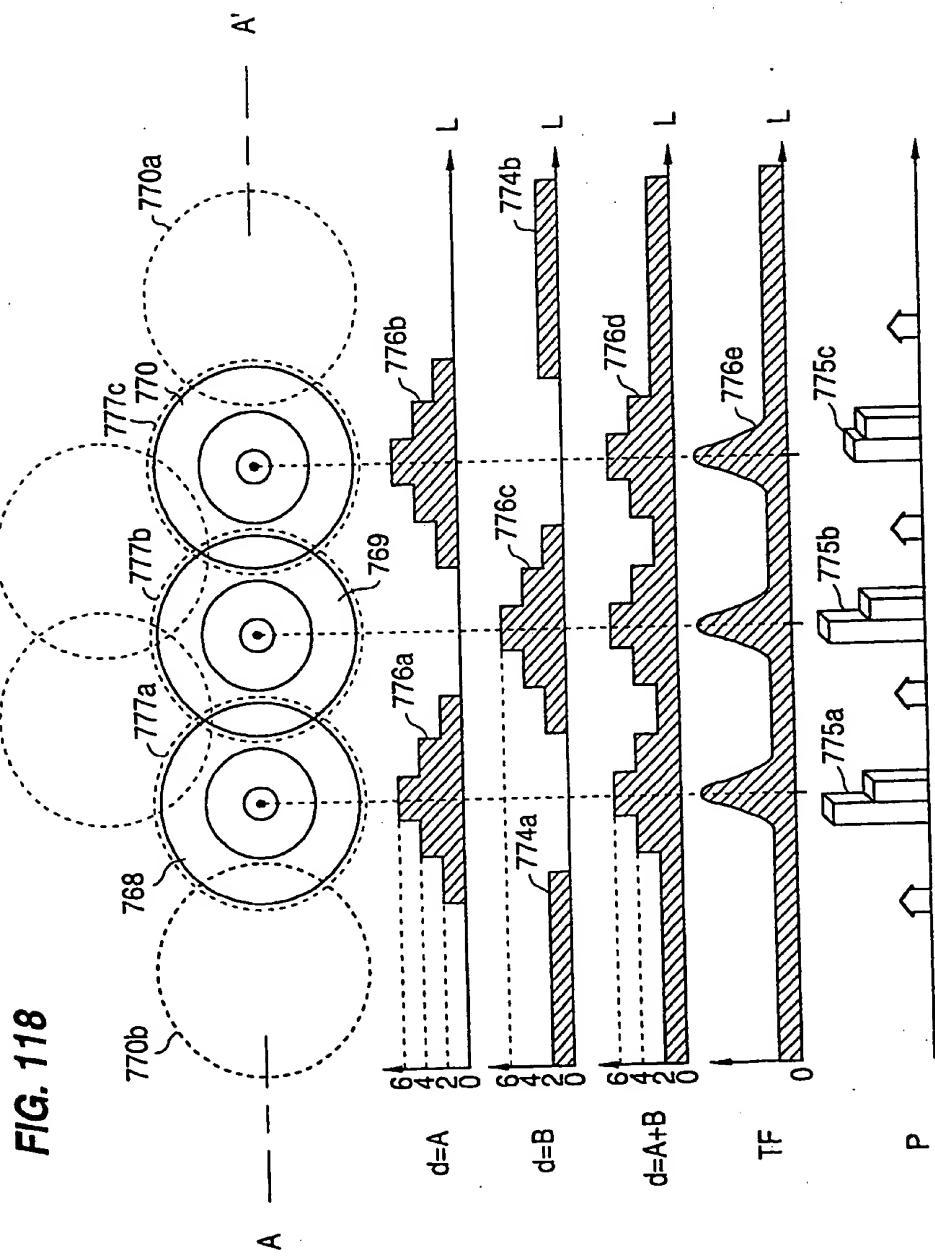


FIG. 115









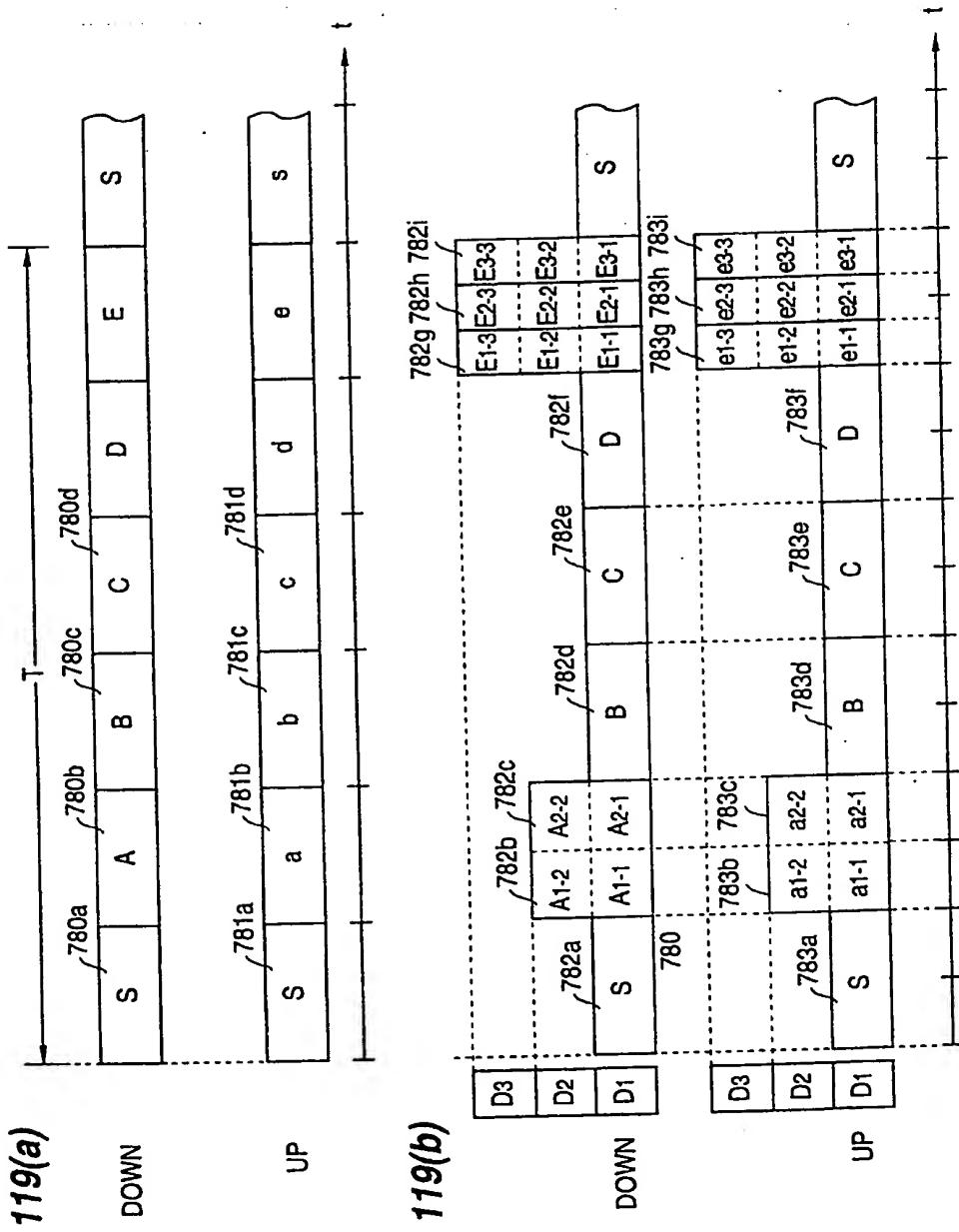
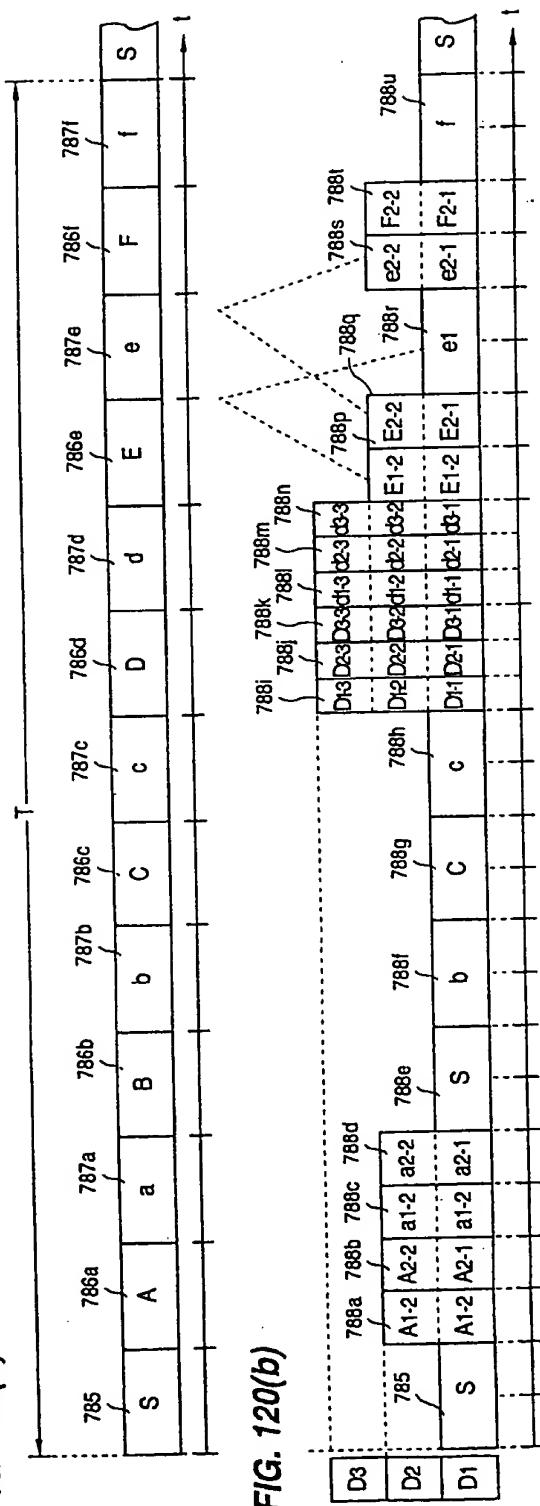


FIG. 120(a)



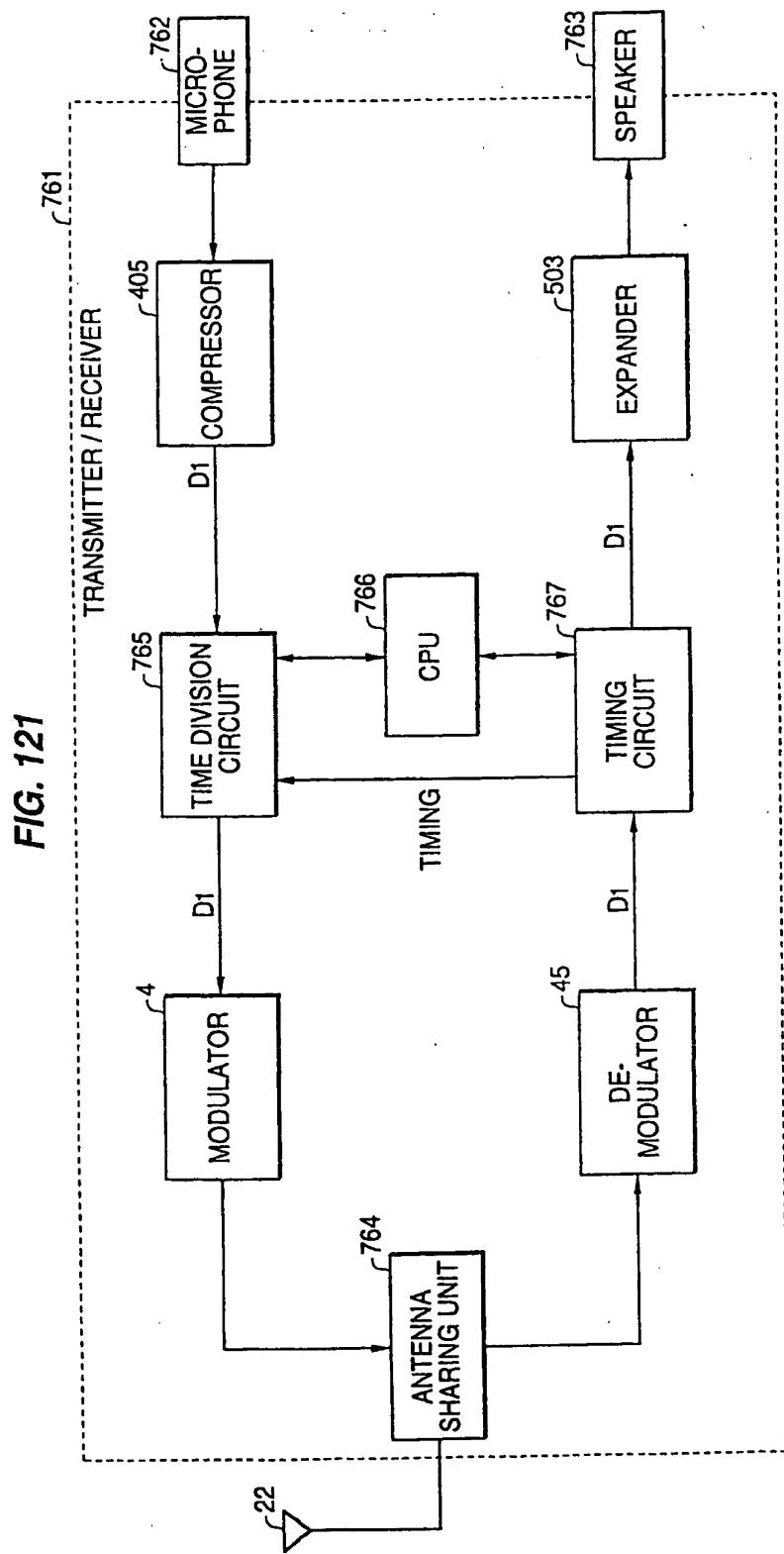
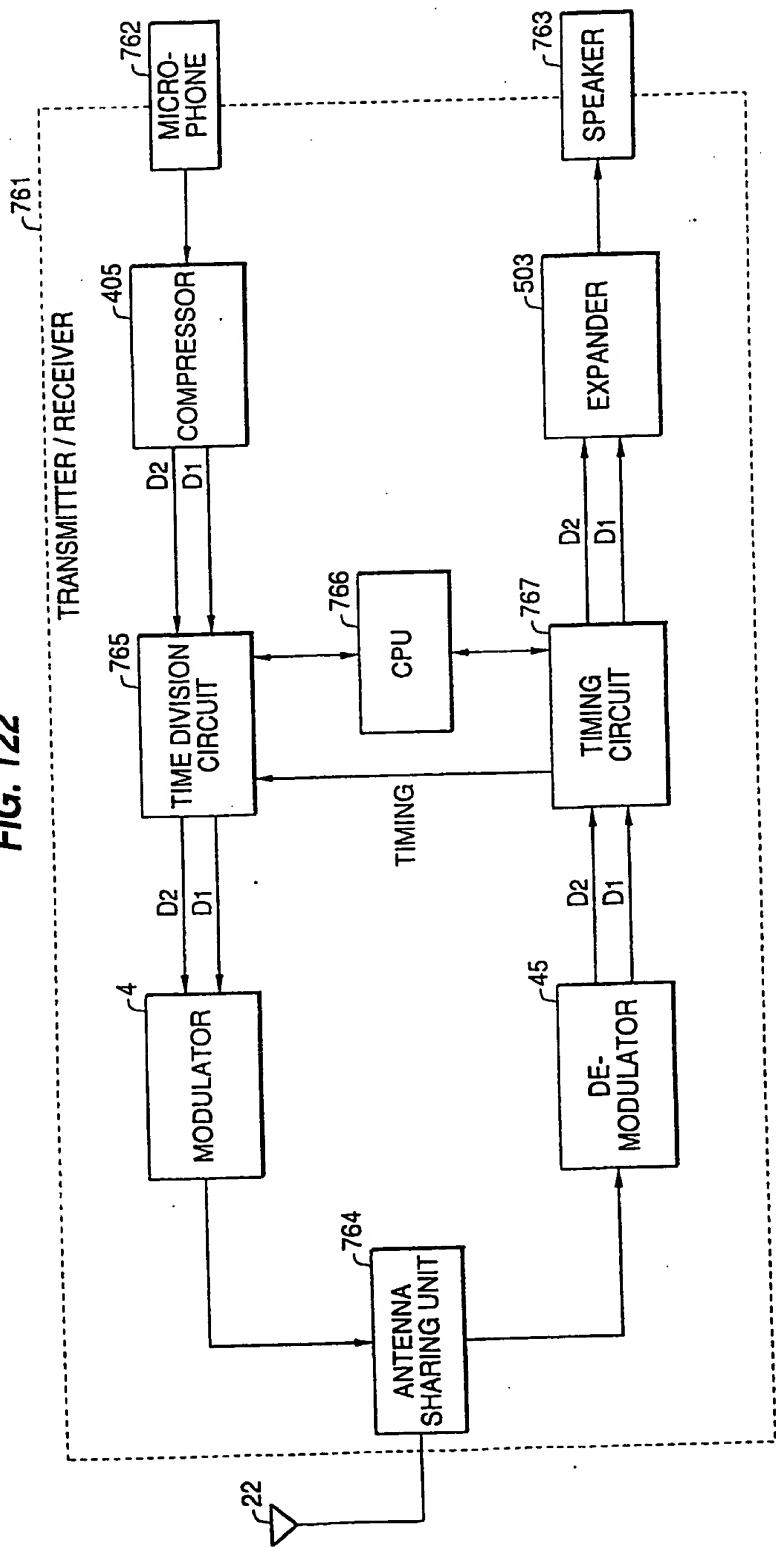
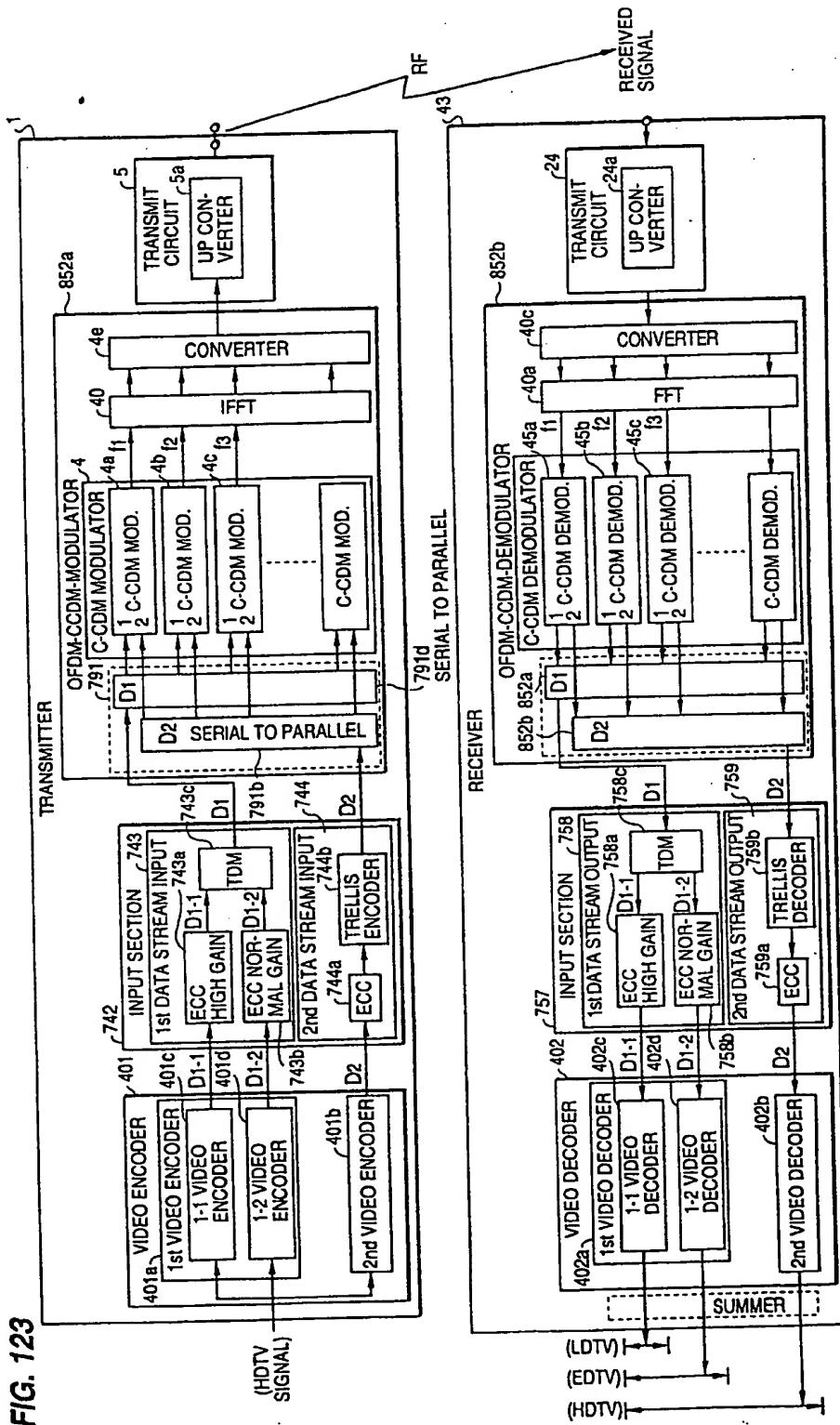
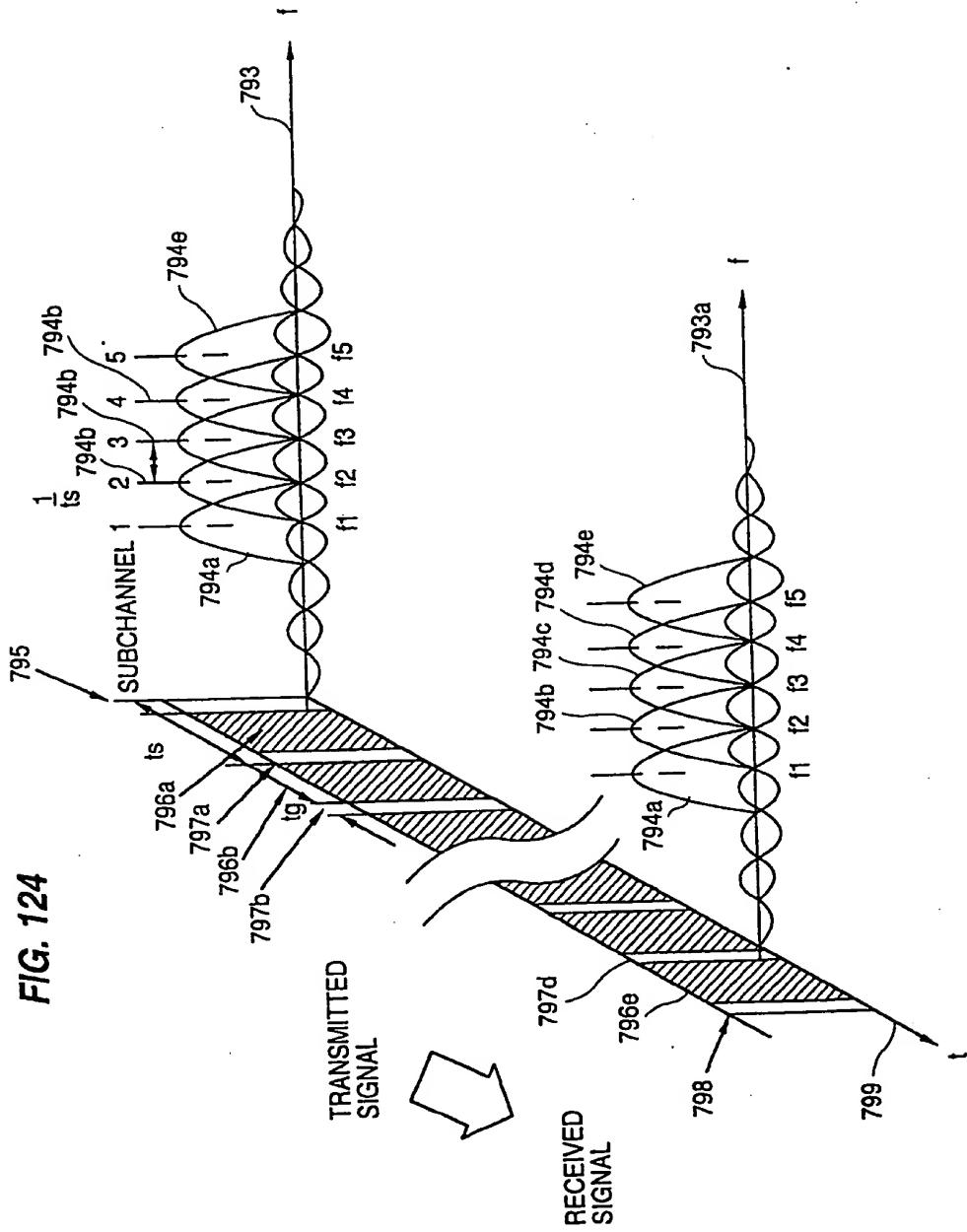
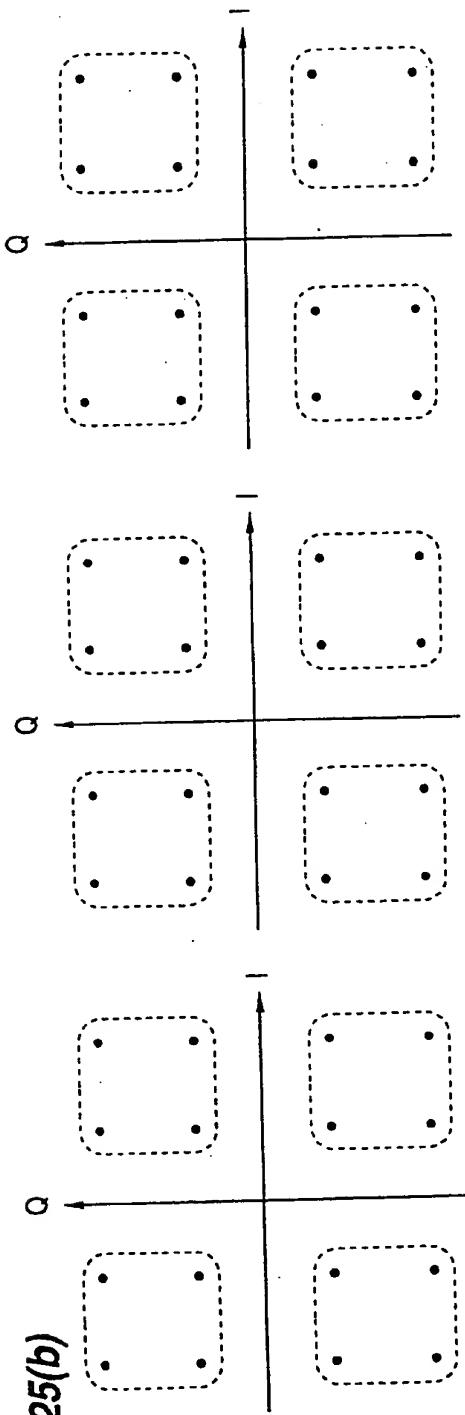
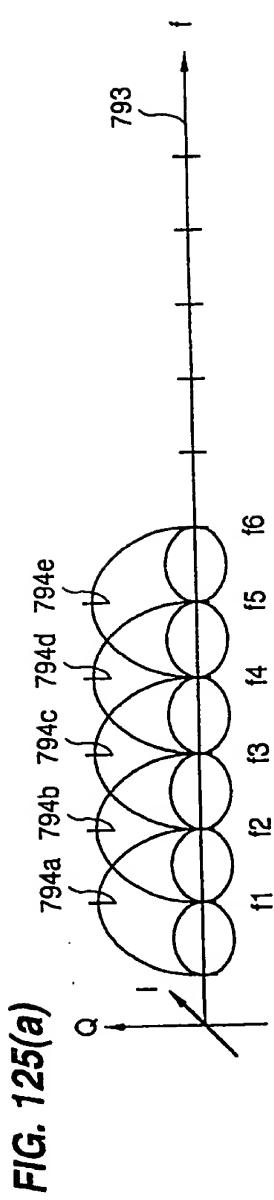


FIG. 122









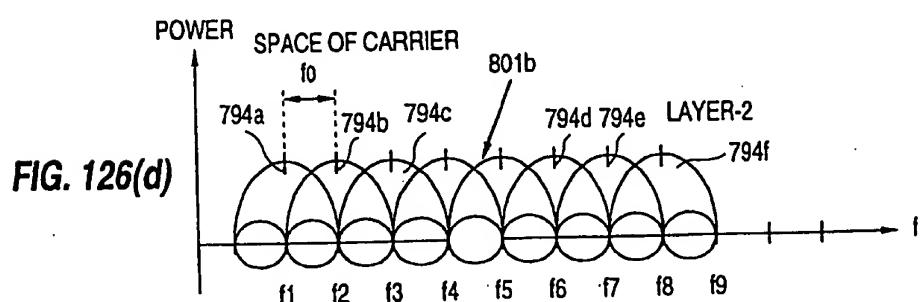
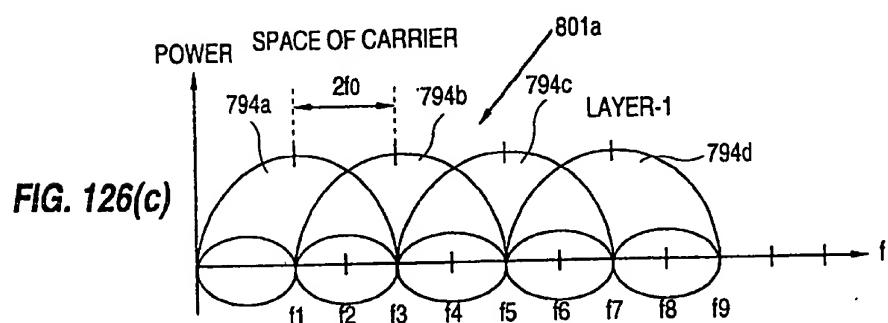
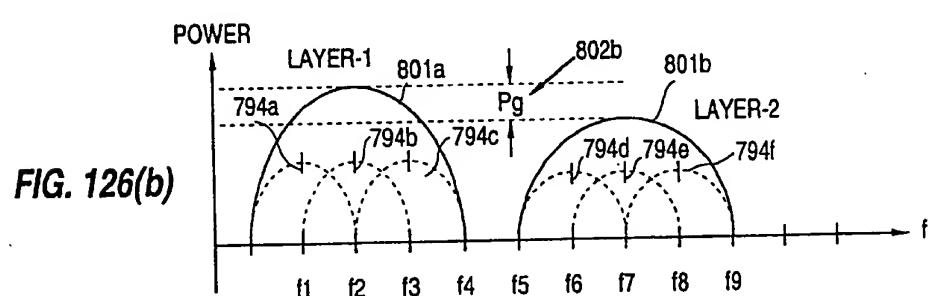
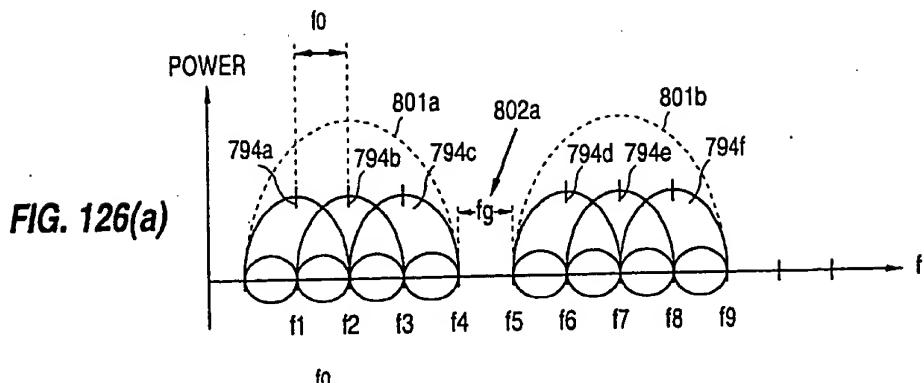


FIG. 127

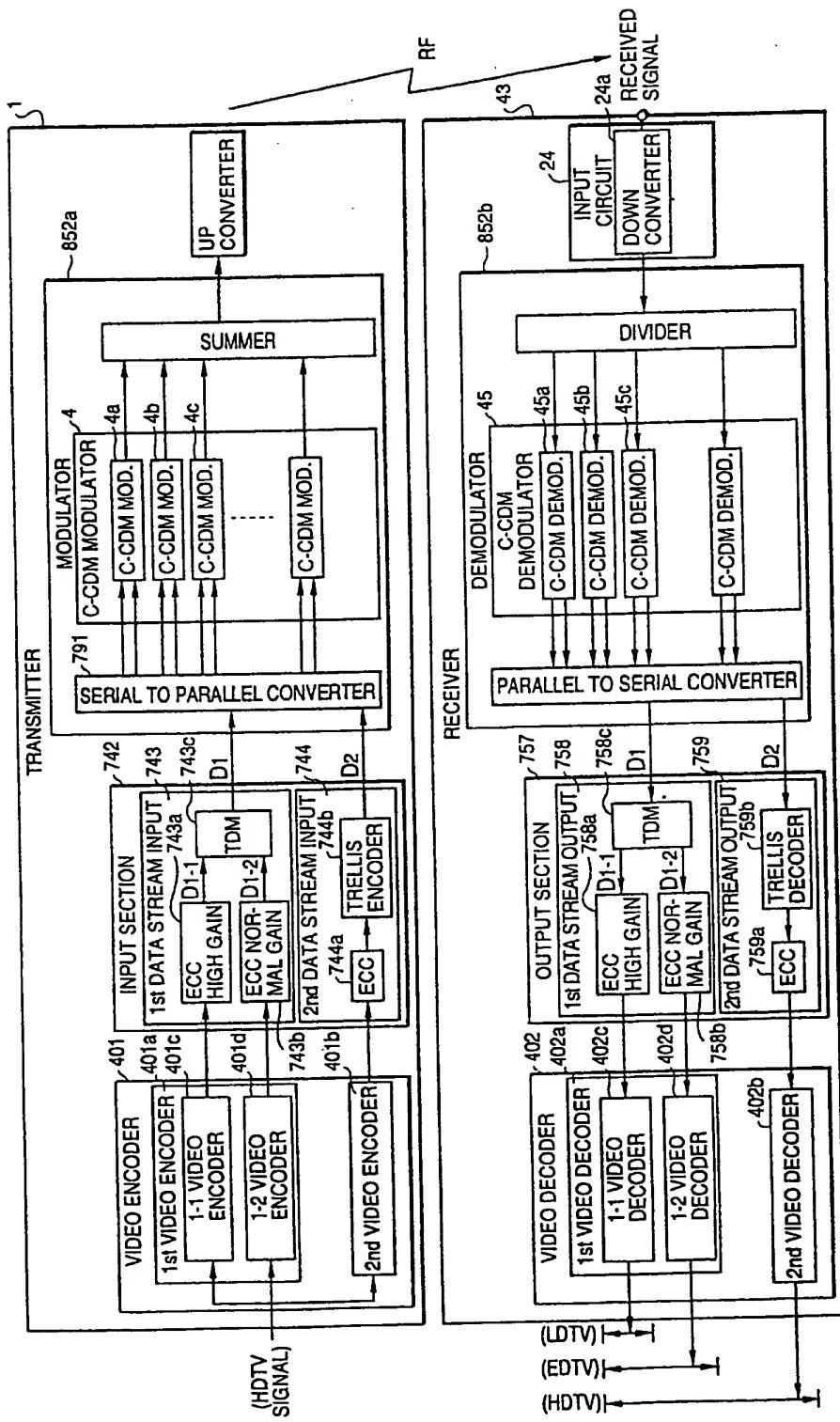


FIG. 128(a)

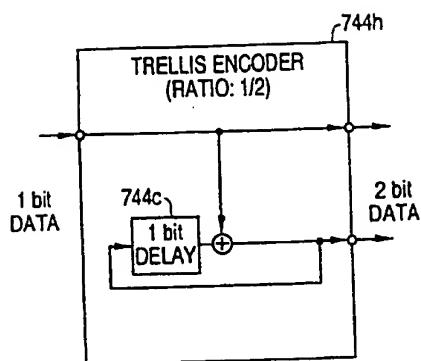


FIG. 128(d)

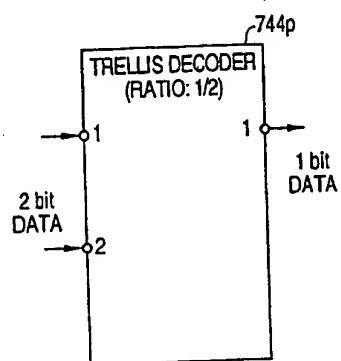


FIG. 128(b)

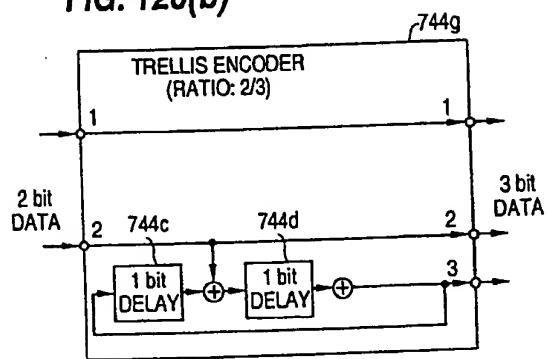


FIG. 128(e)

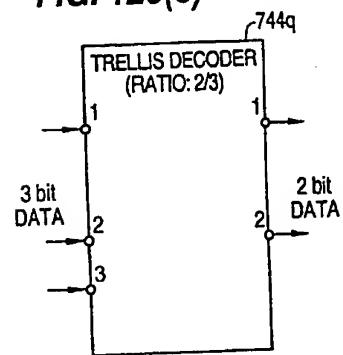


FIG. 128(c)

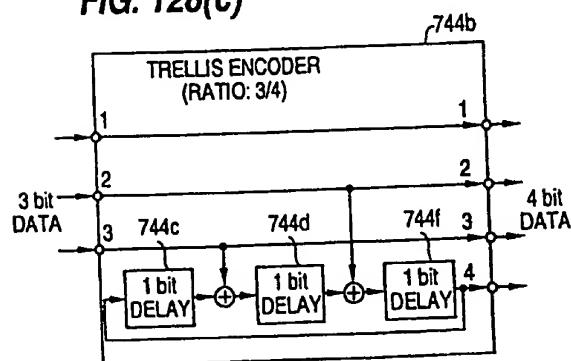


FIG. 128(f)

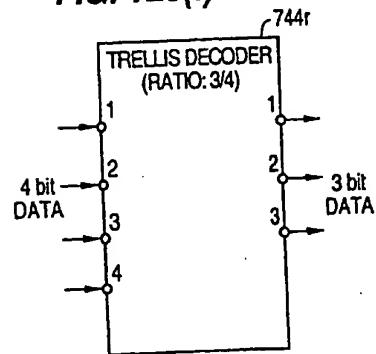


FIG. 129

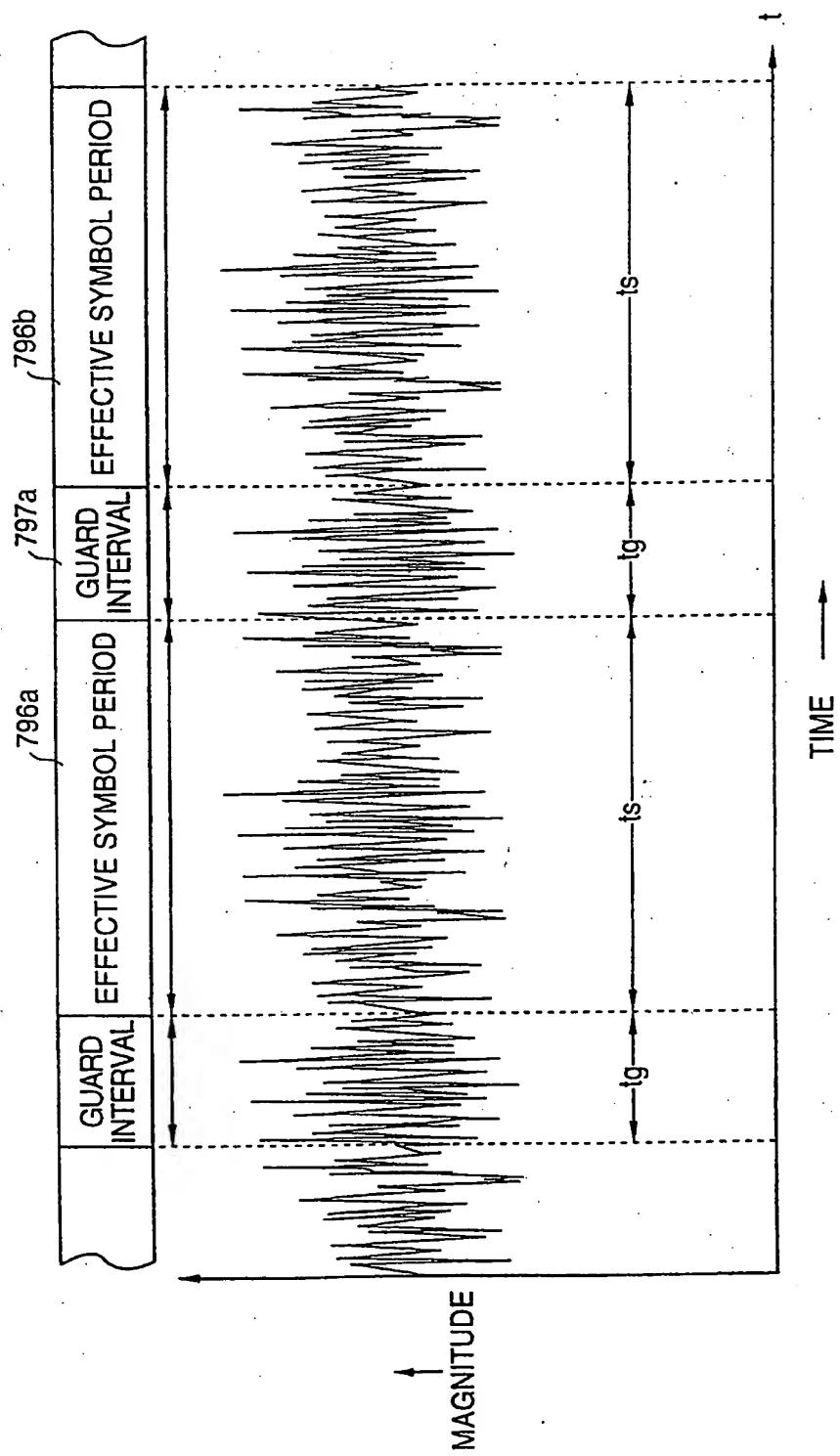
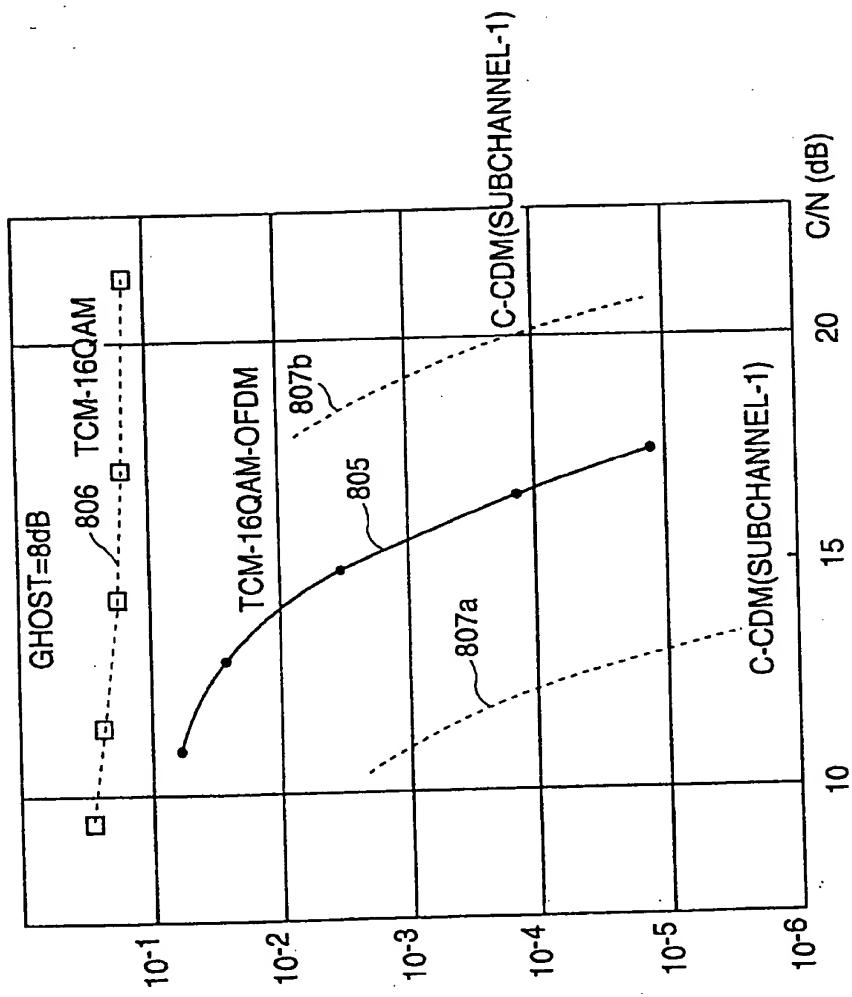


FIG. 130



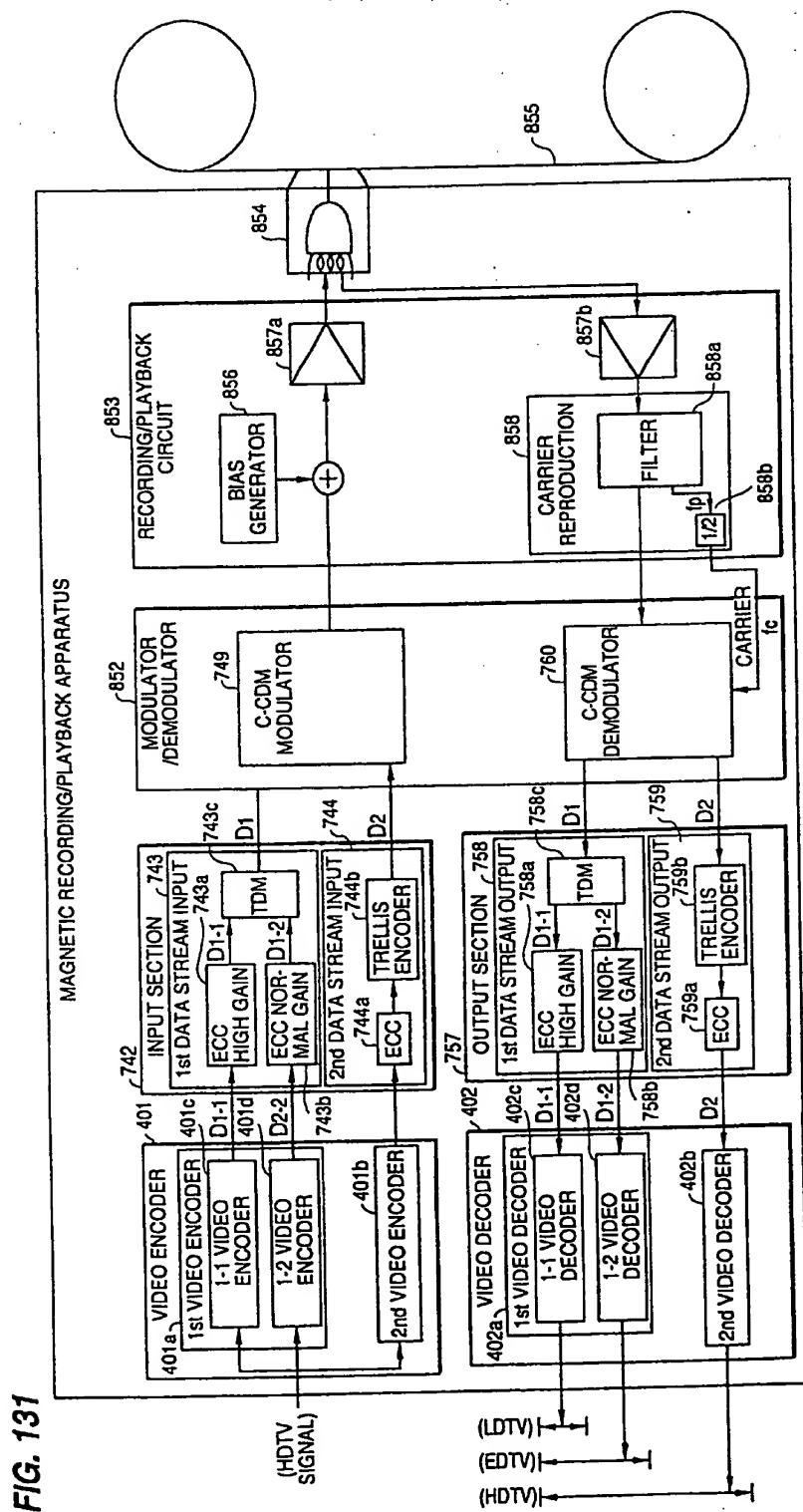


FIG. 131

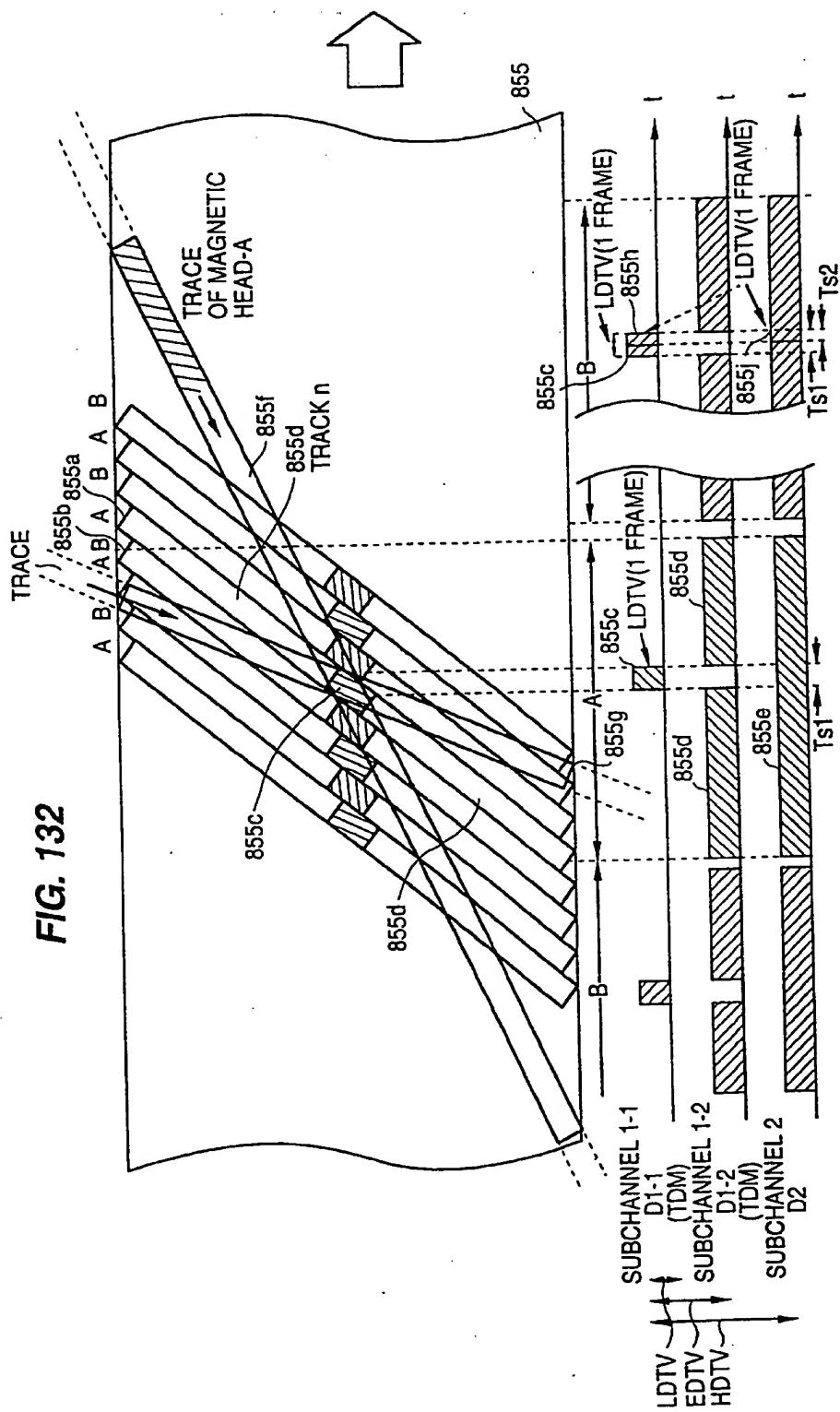


FIG. 133

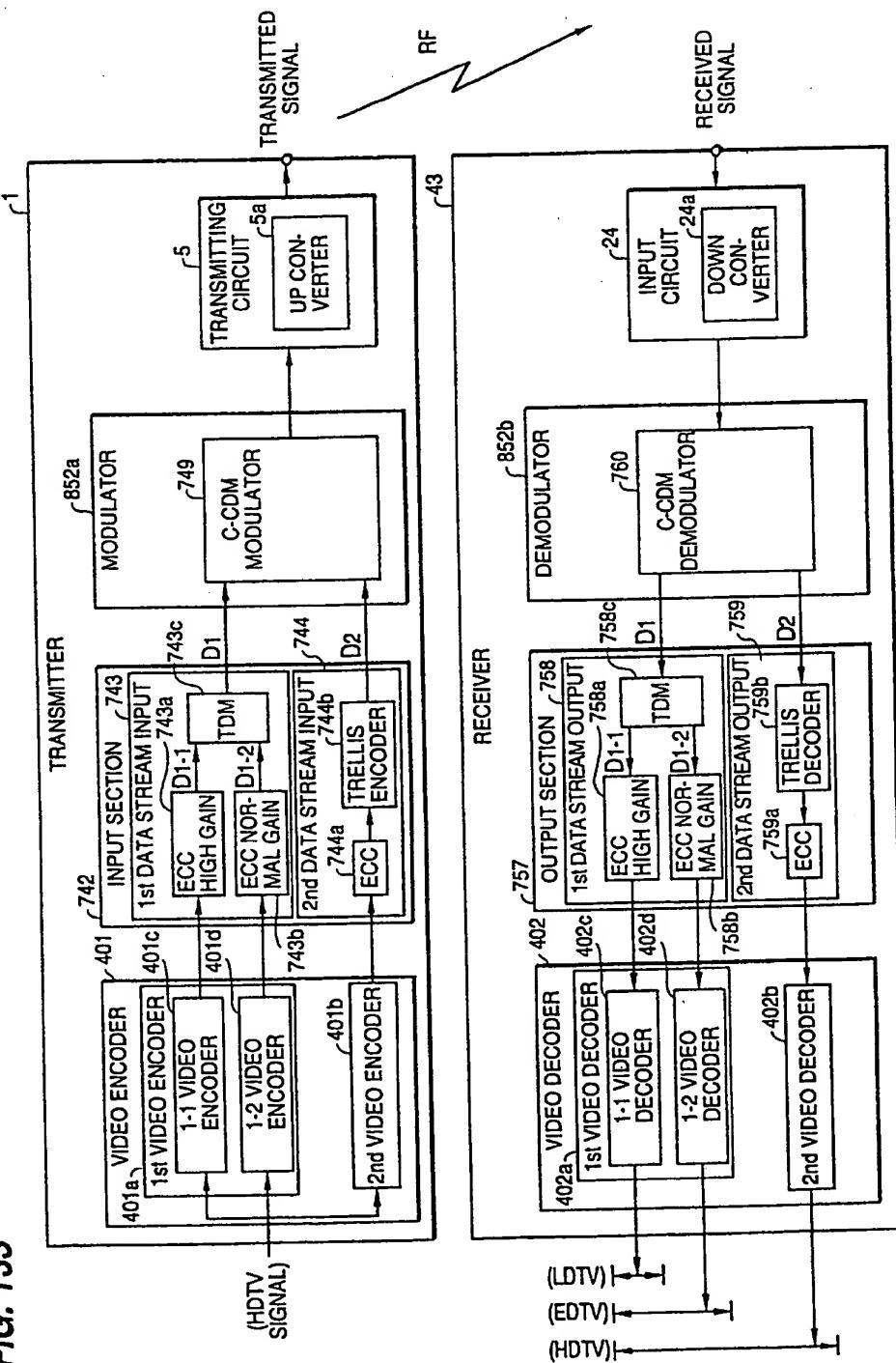


FIG. 134

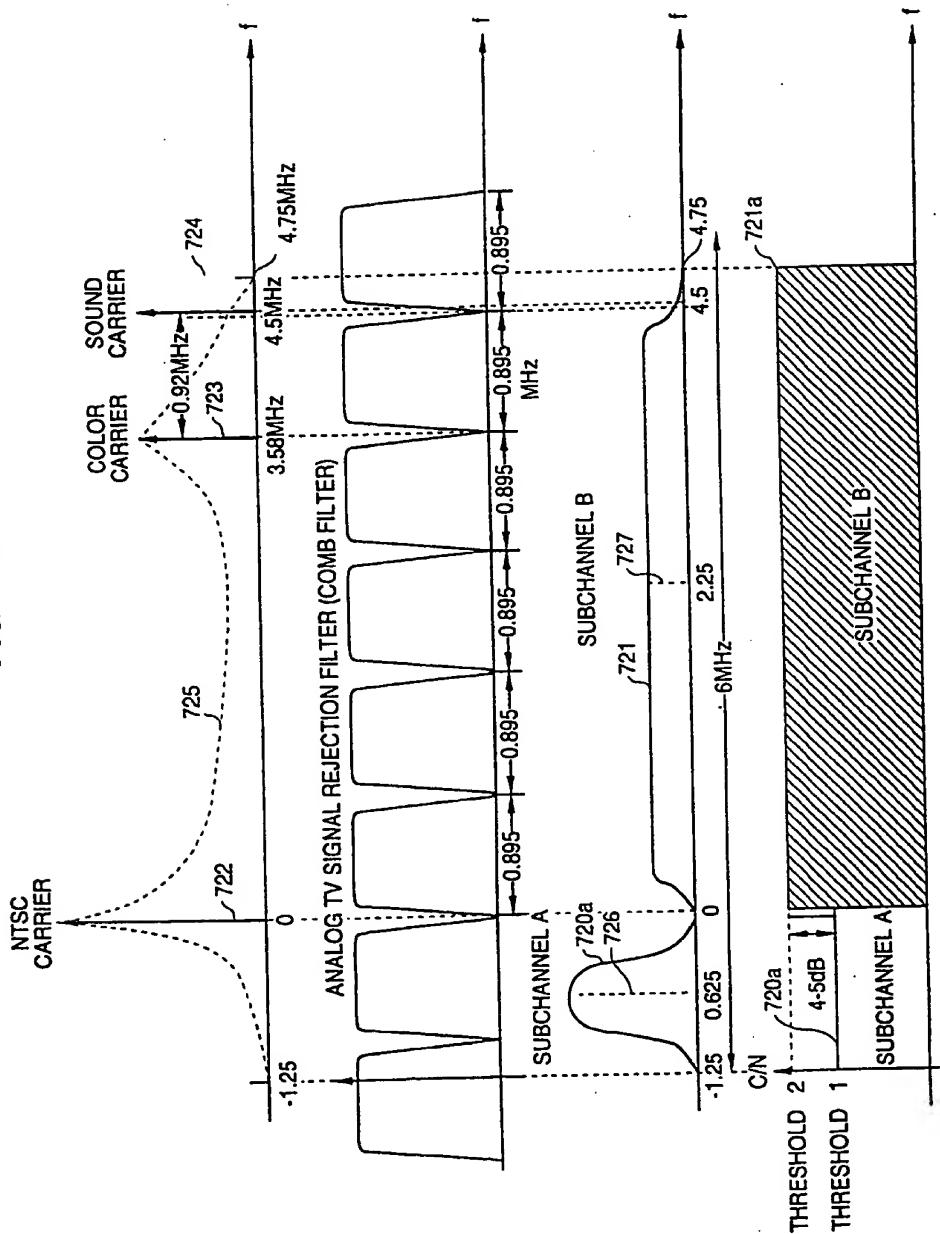


FIG. 135

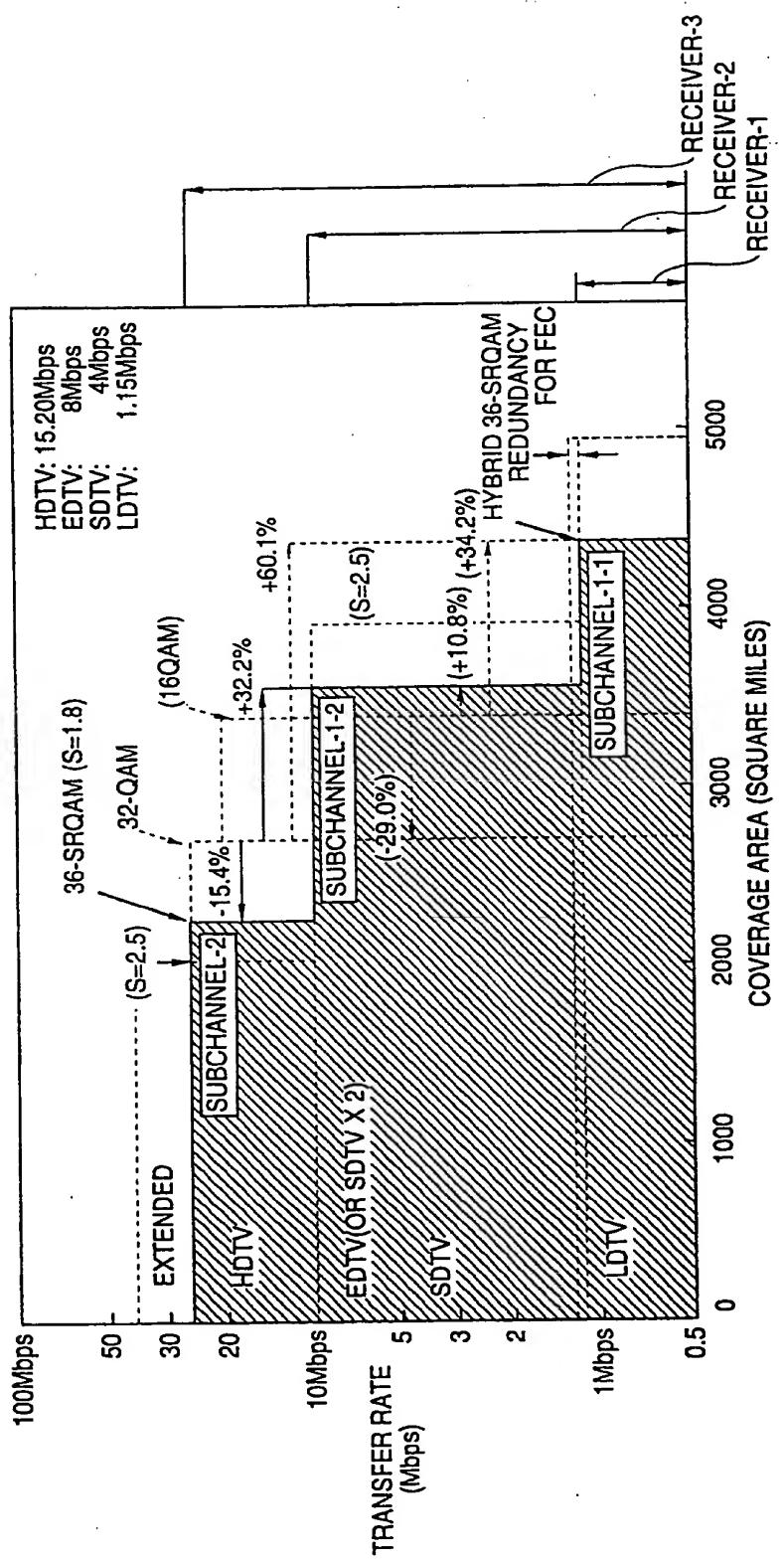
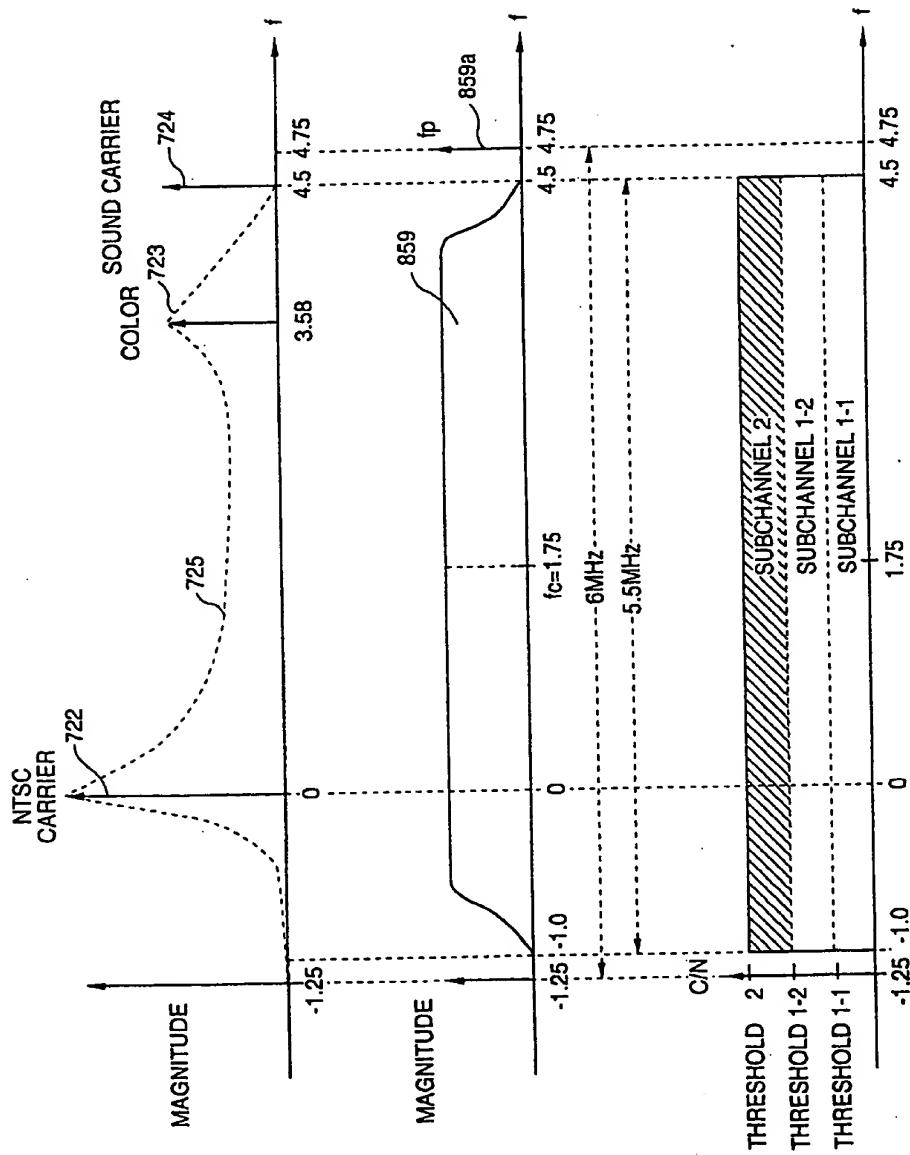


FIG. 136



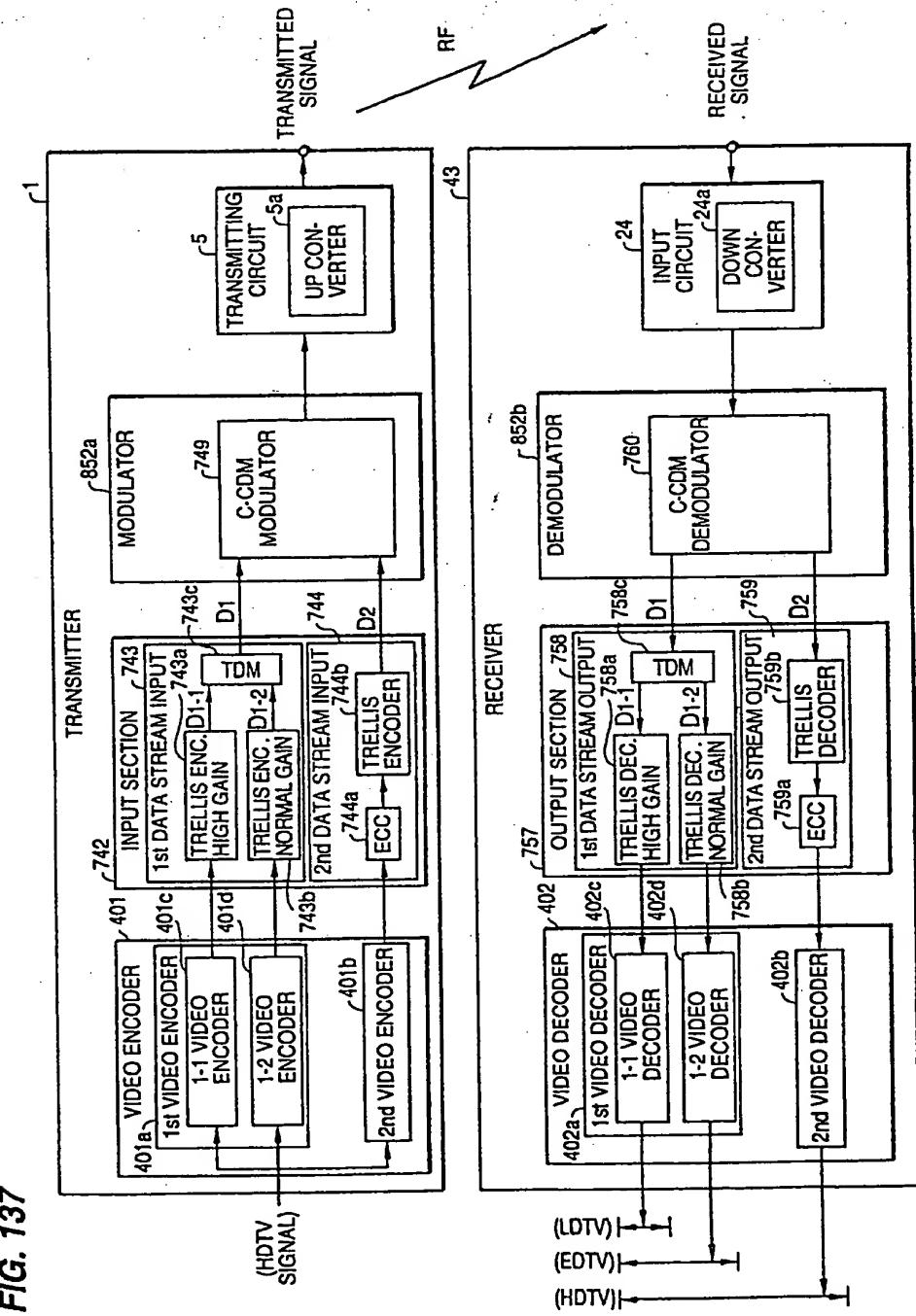


FIG. 137

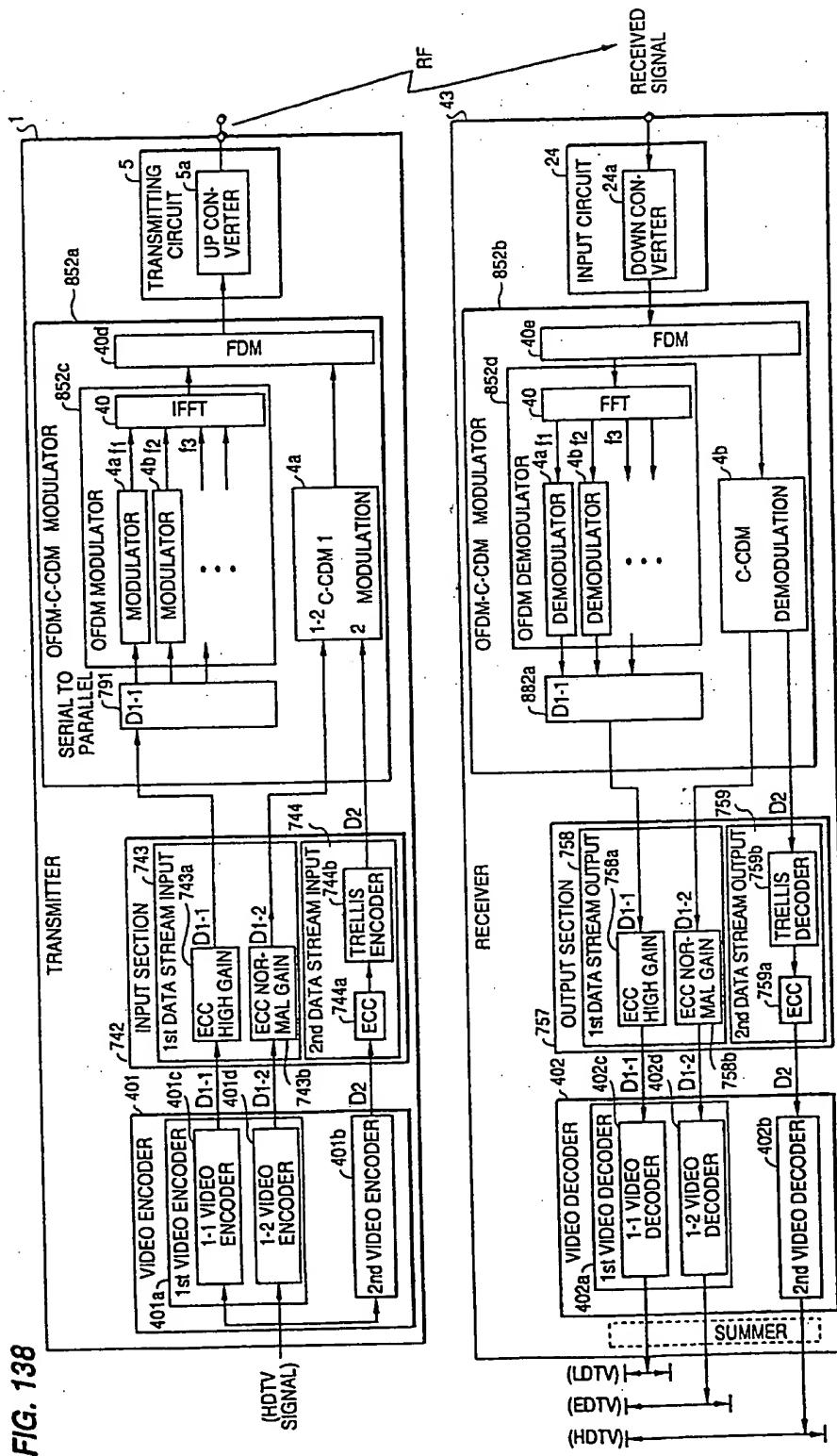


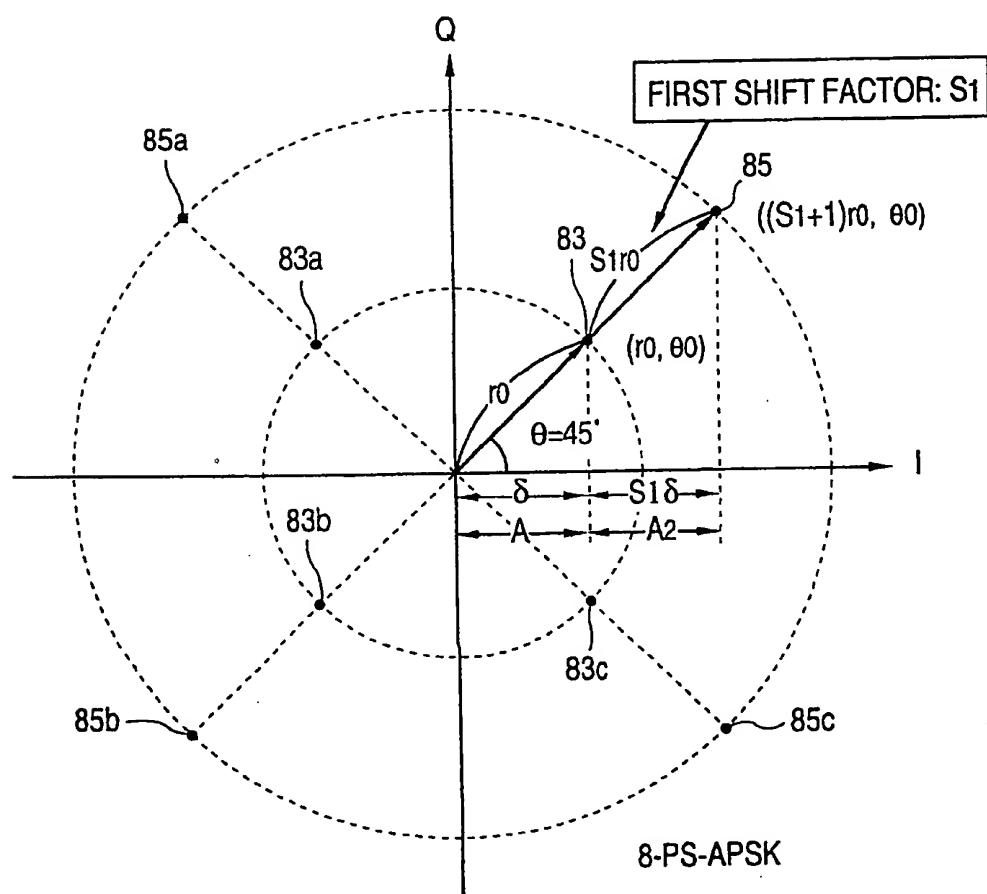
FIG. 139

FIG. 140

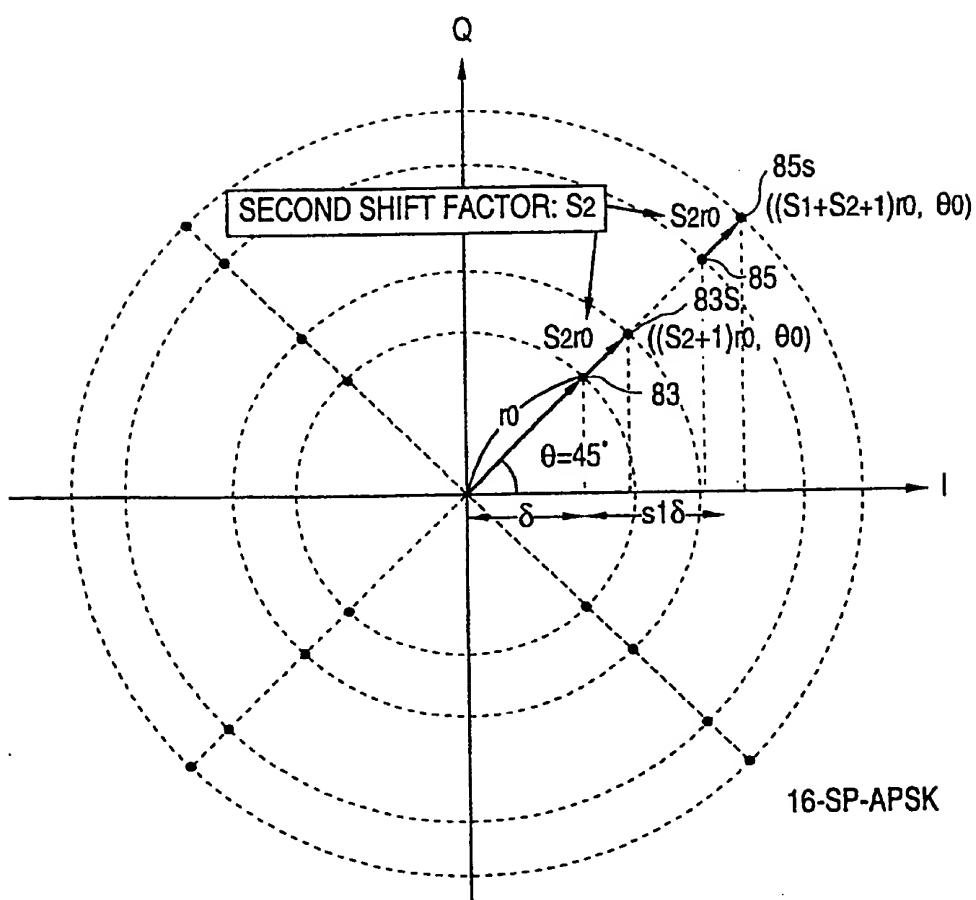


FIG. 141

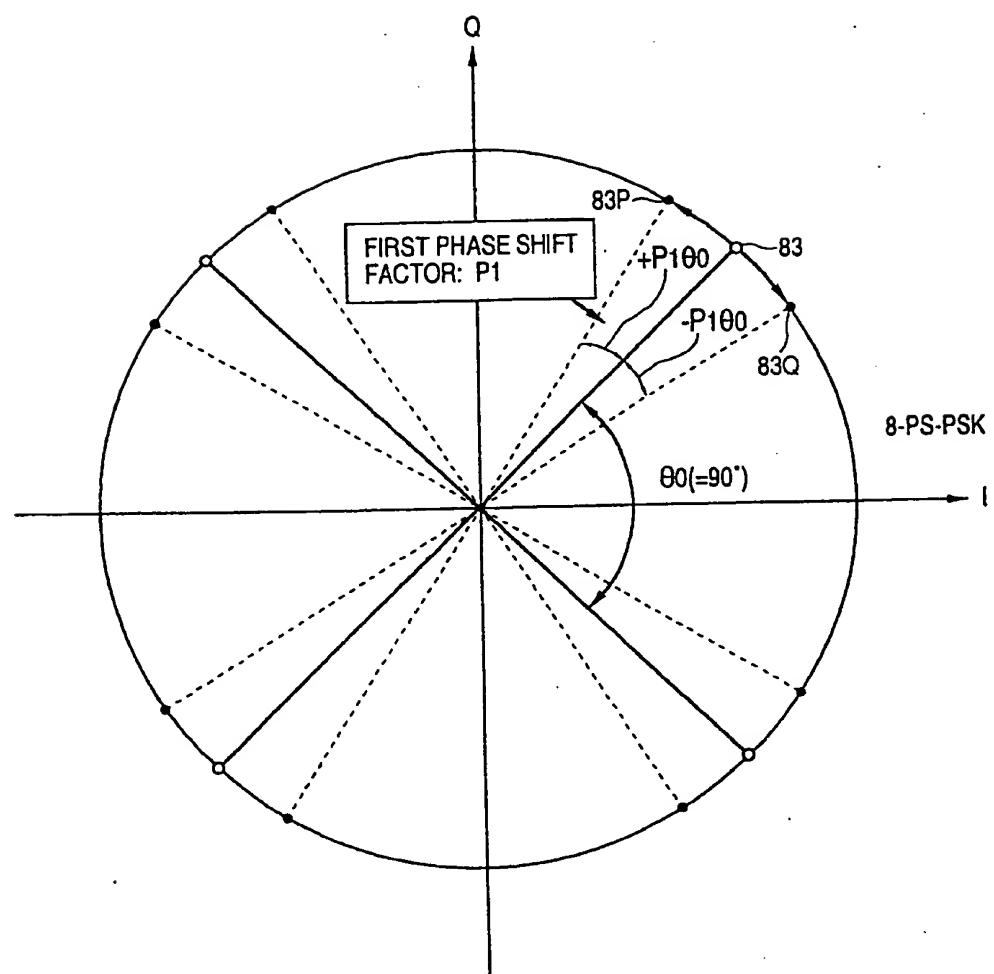


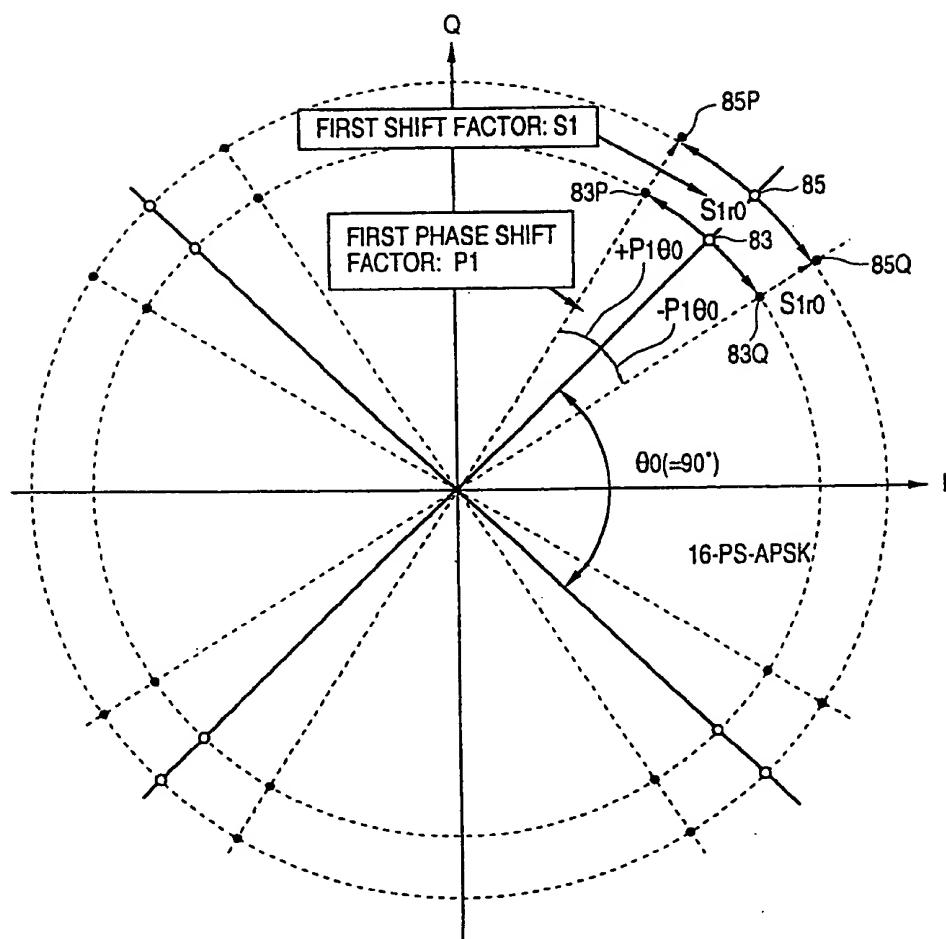
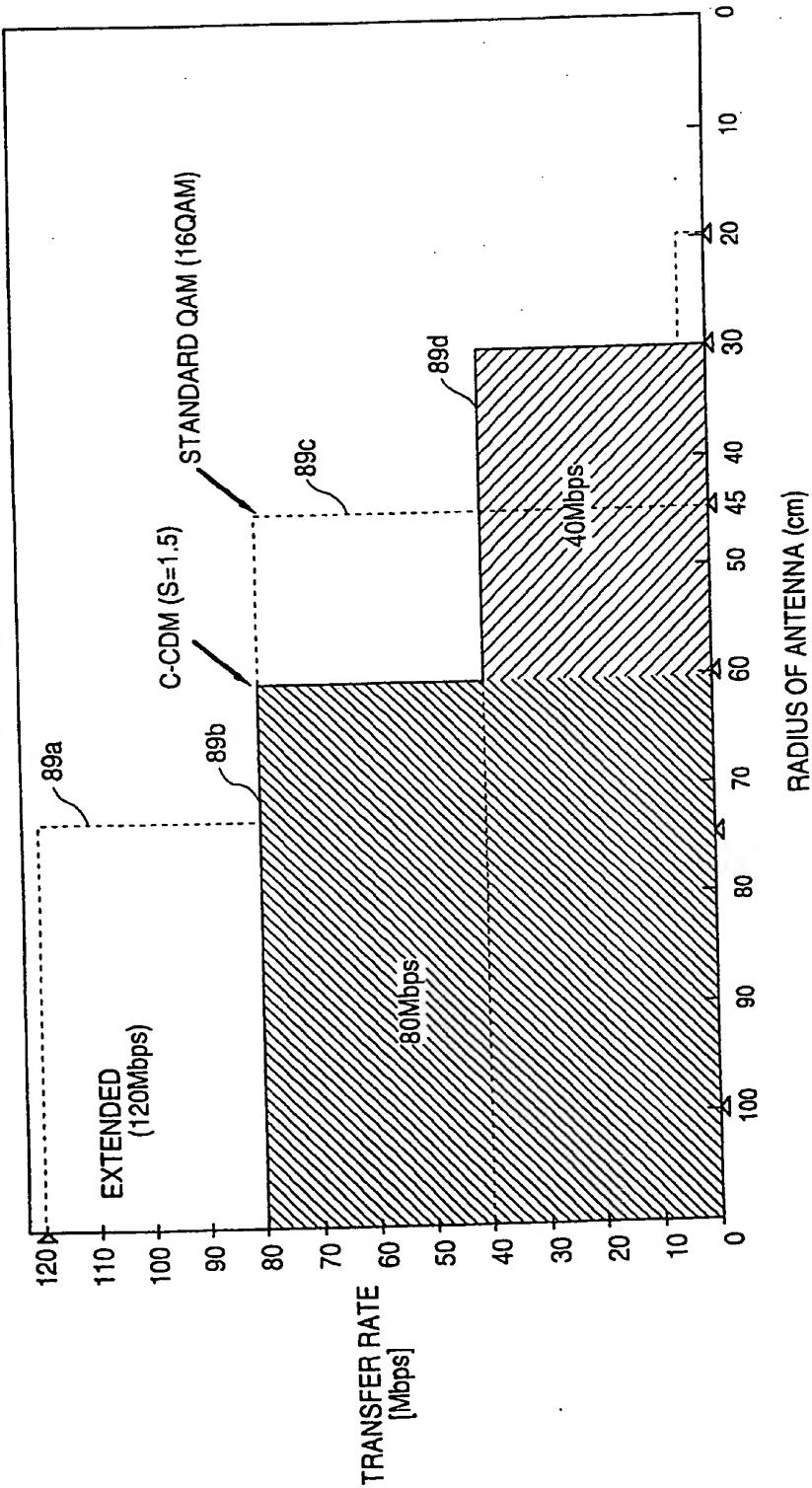
FIG. 142

FIG. 143



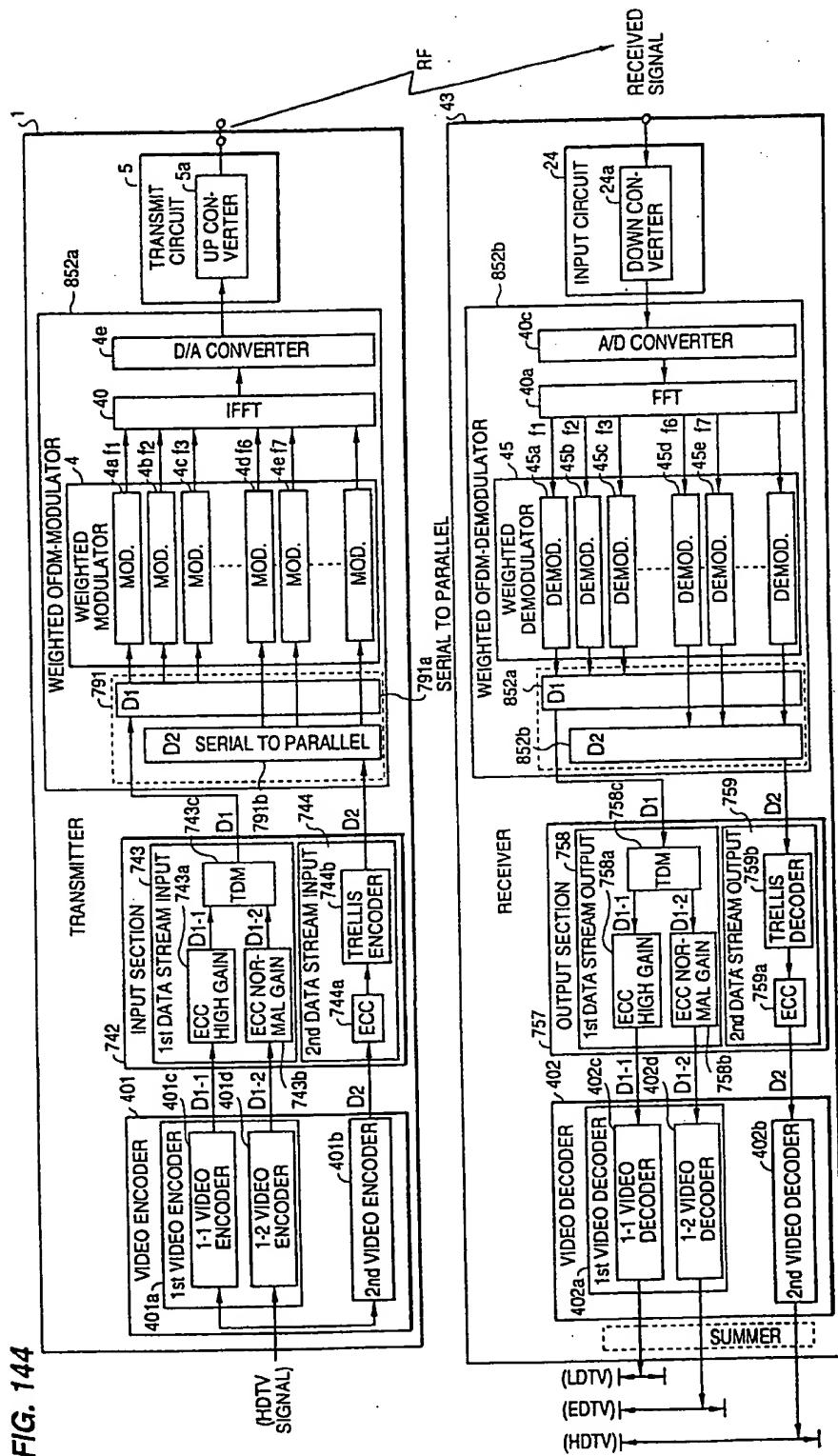
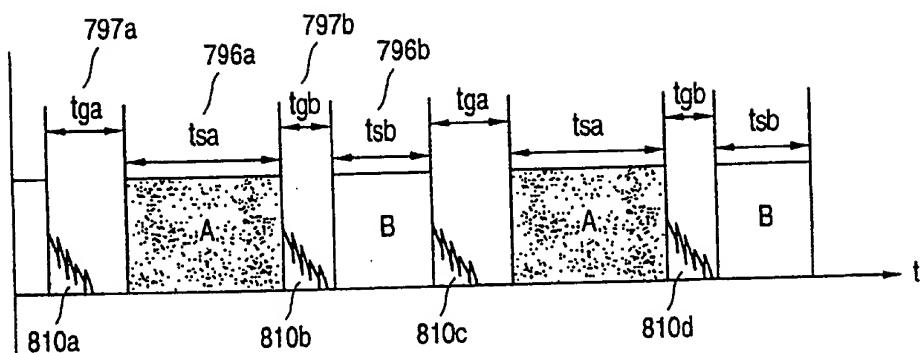
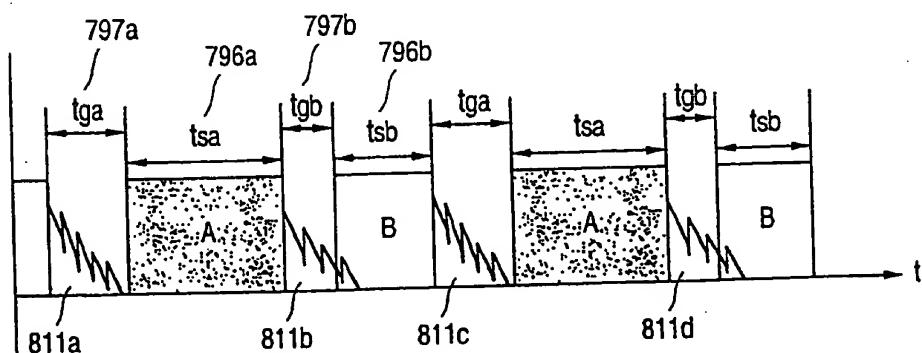


FIG. 145(a)**FIG. 145(b)**

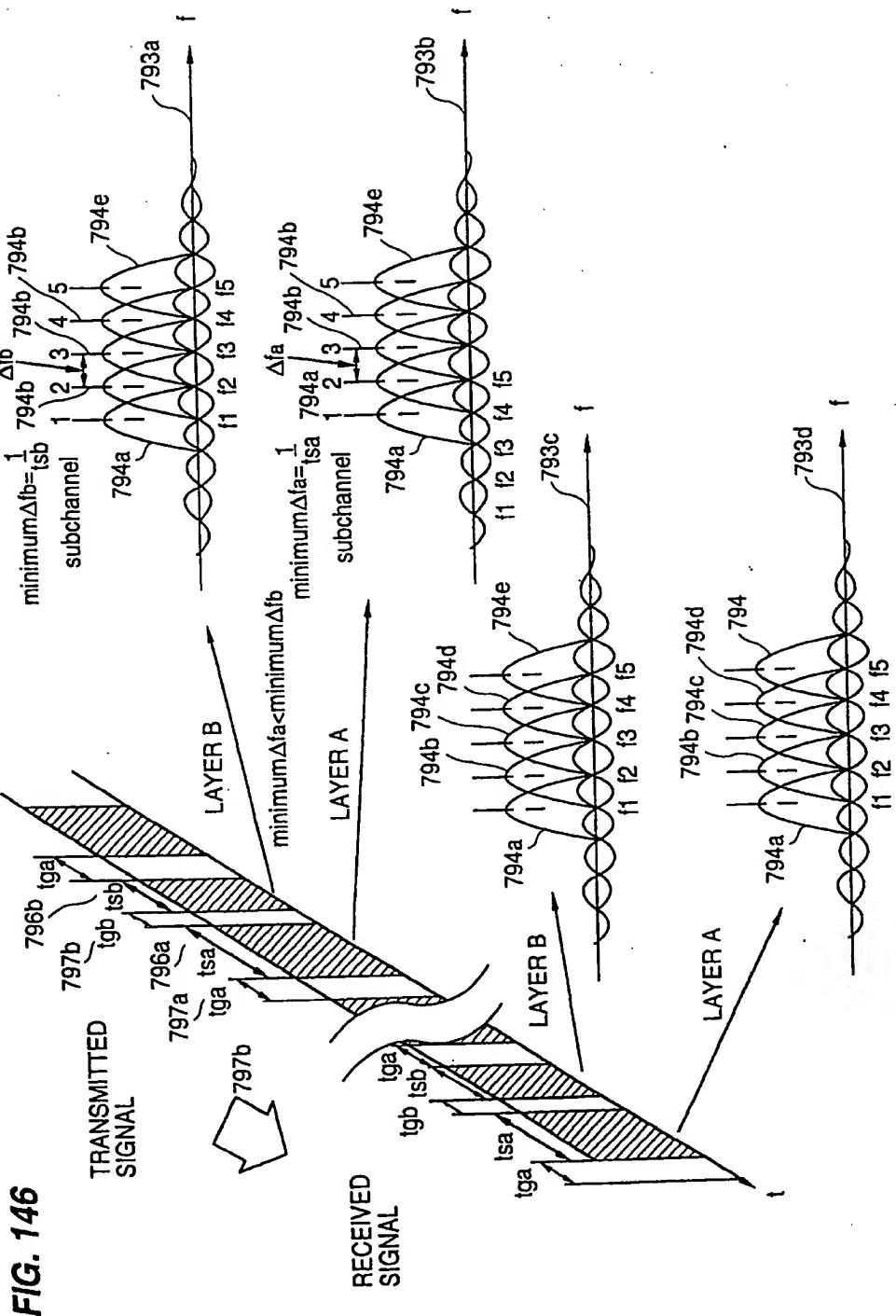


FIG. 147

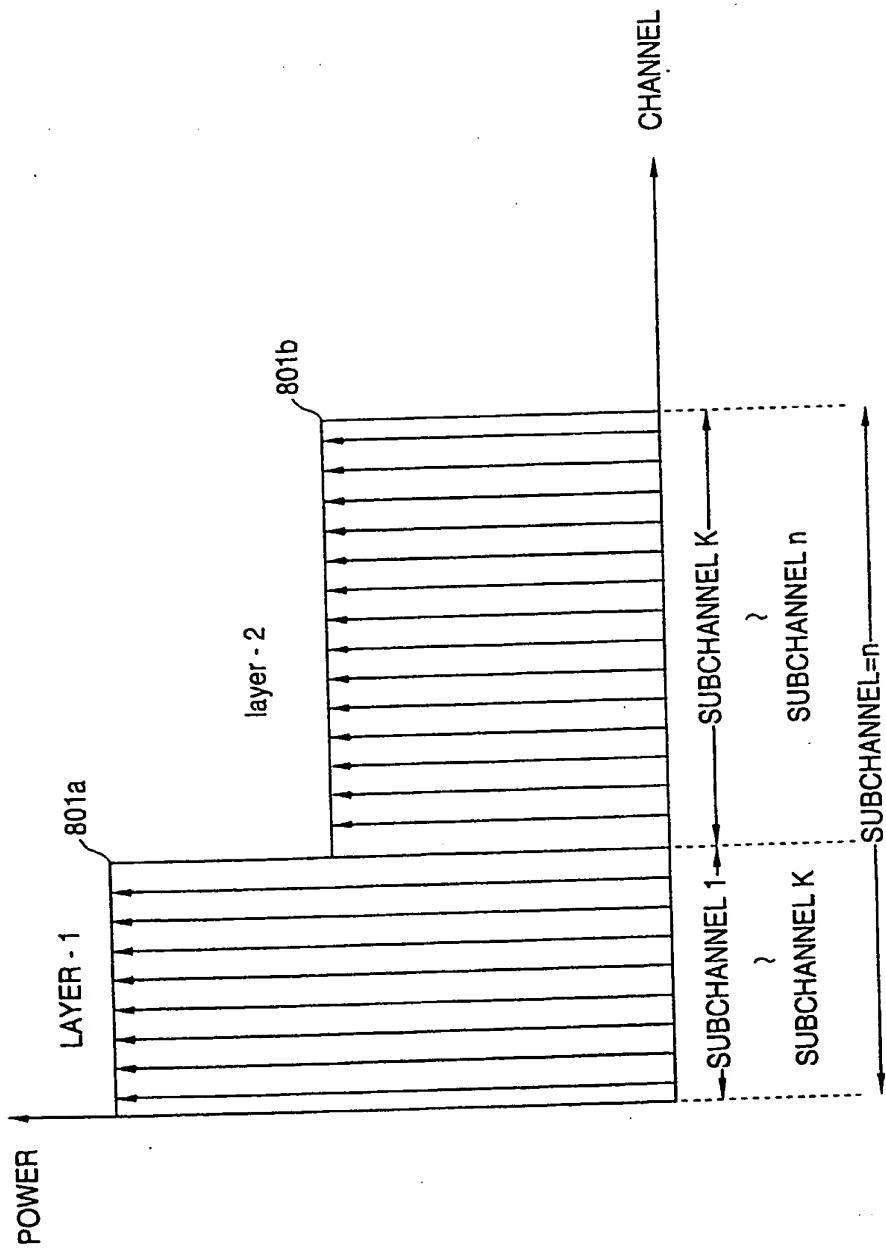
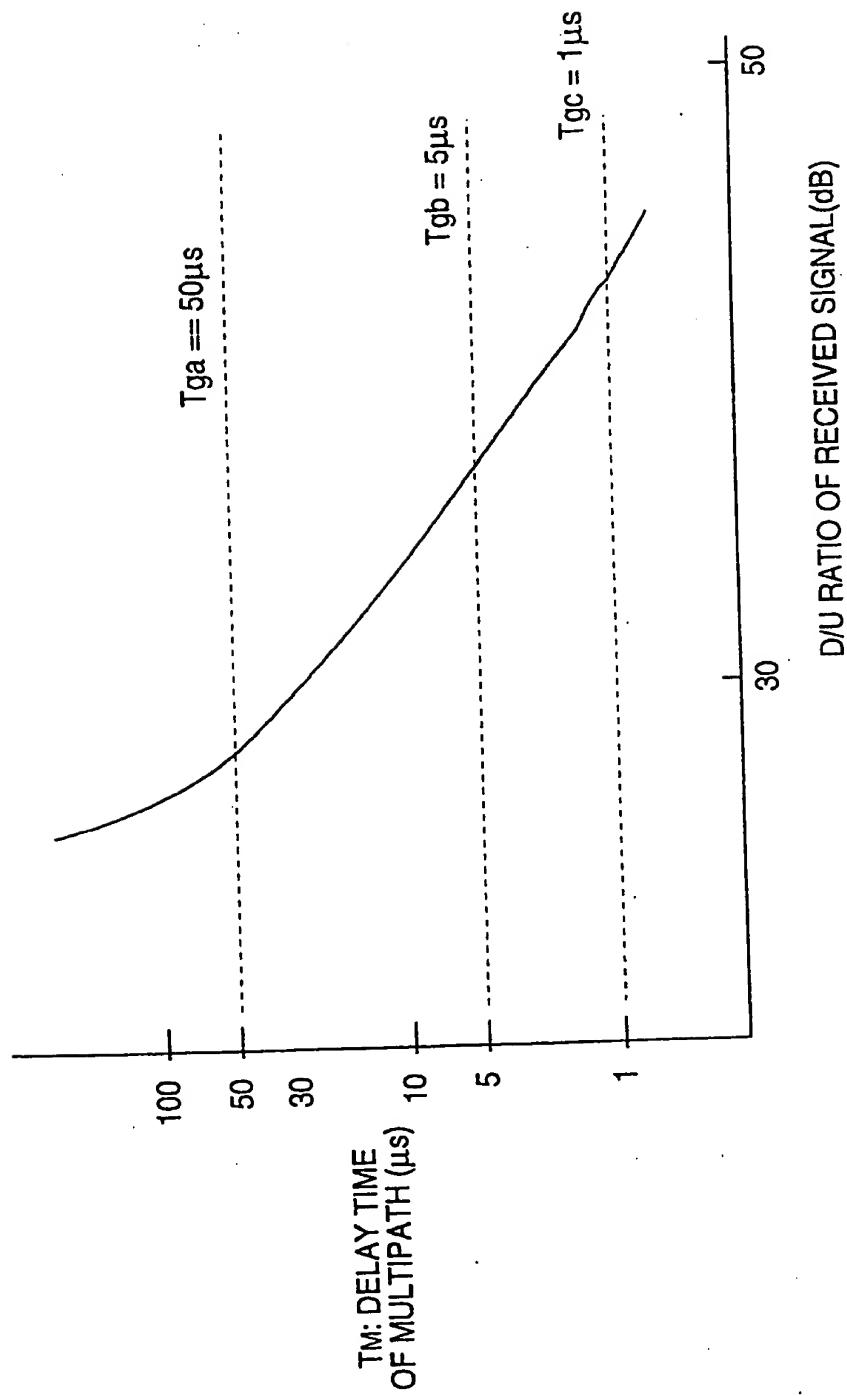


FIG. 148



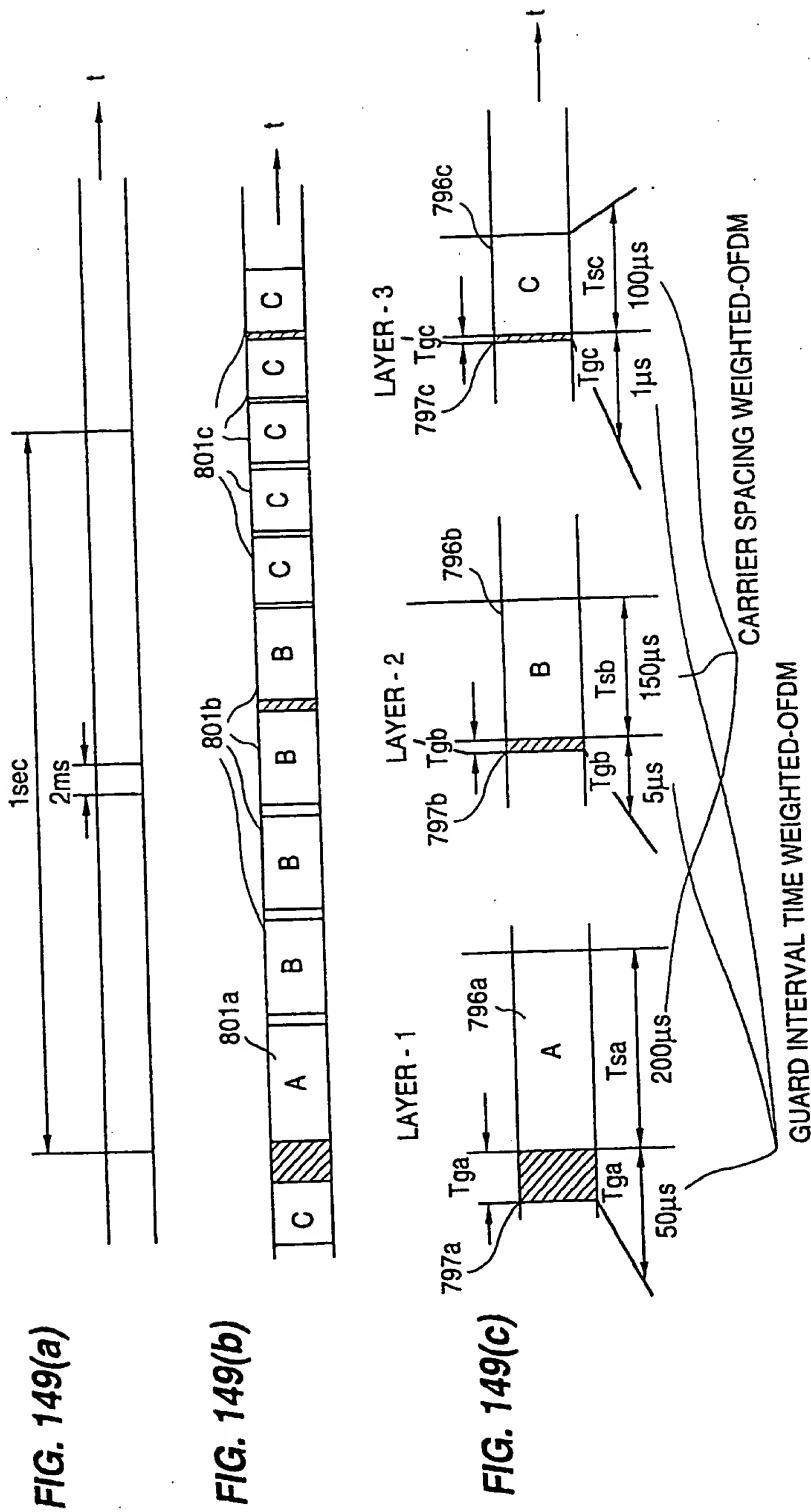


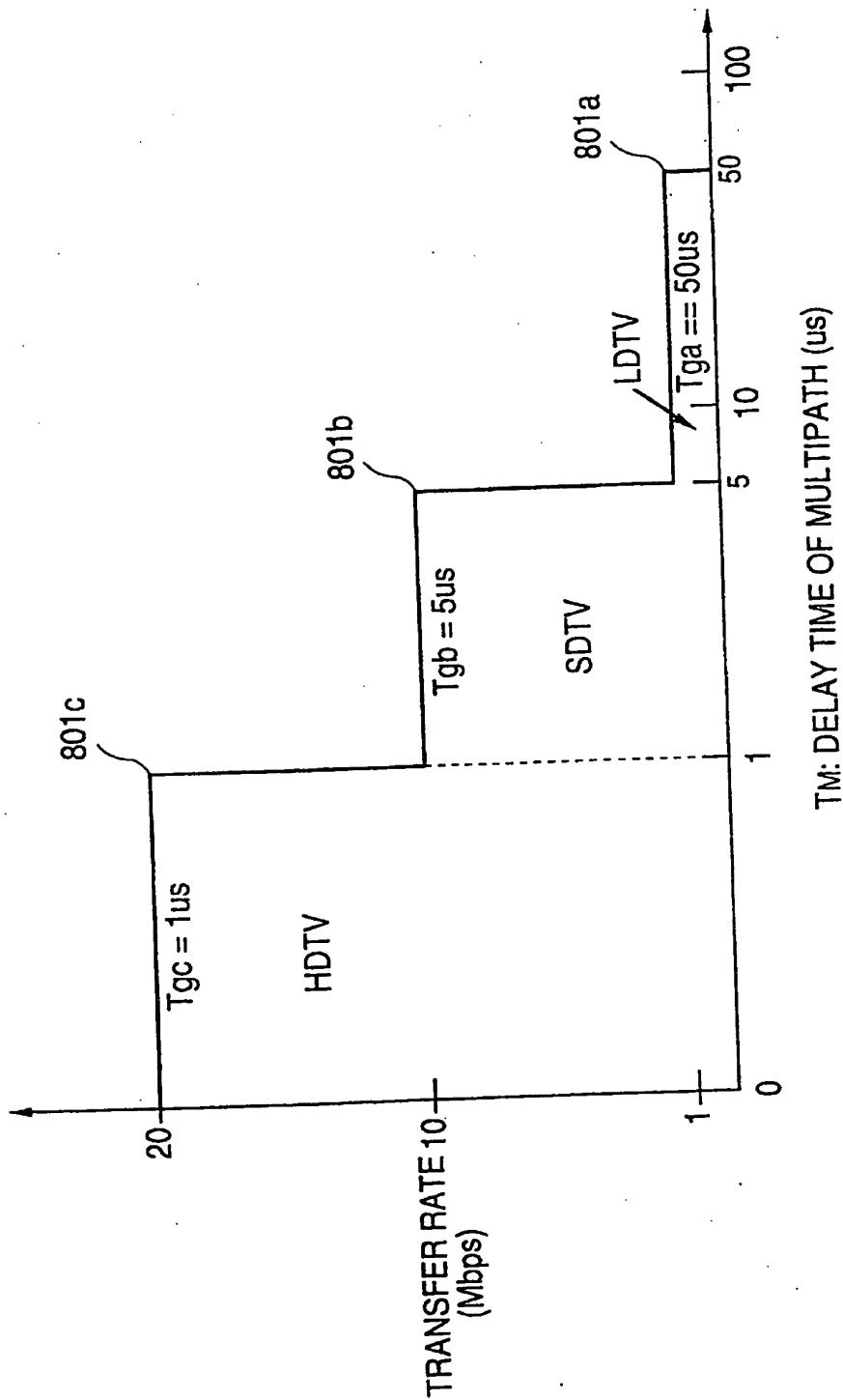
FIG. 150

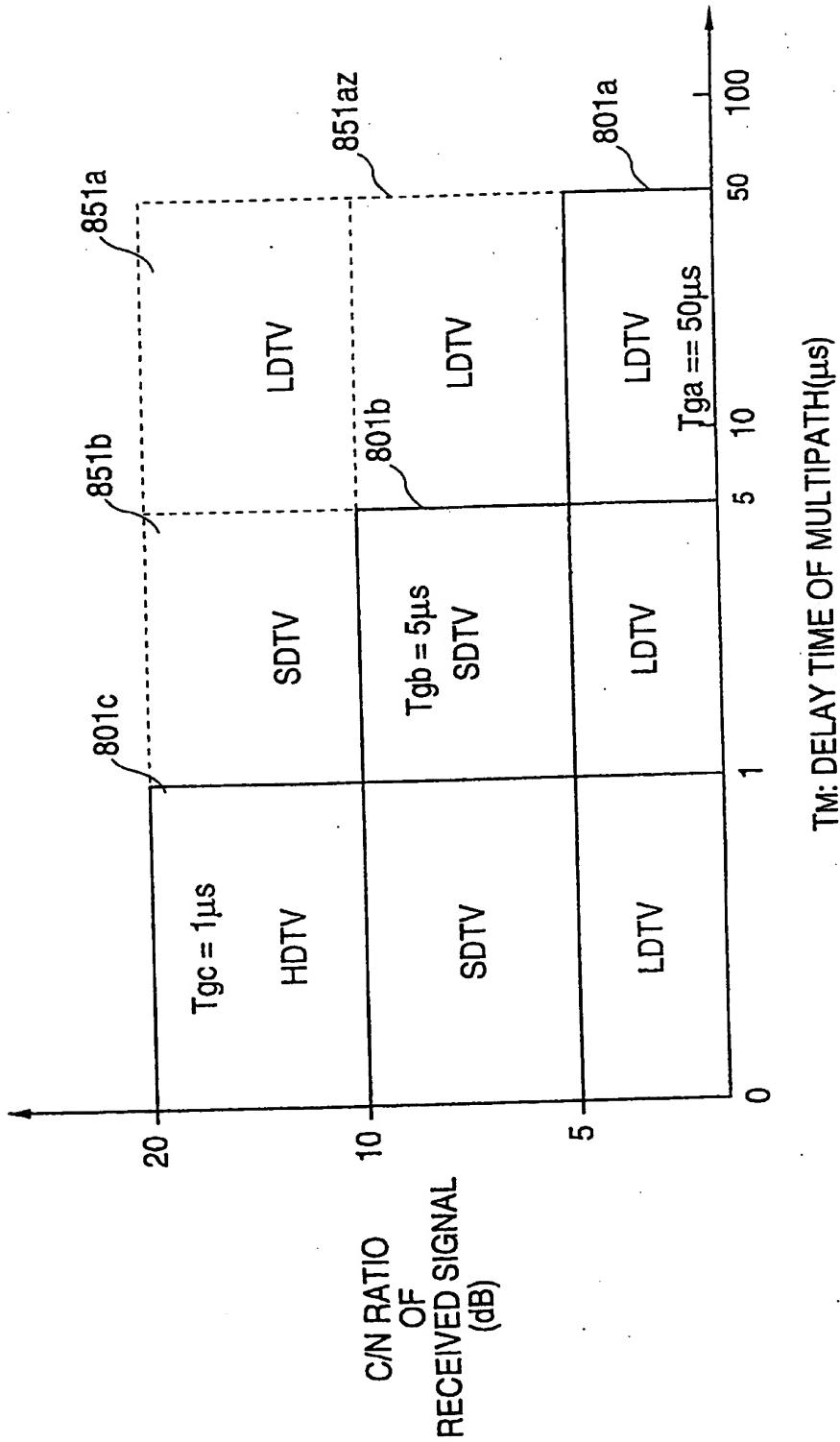
FIG. 151

FIG. 152

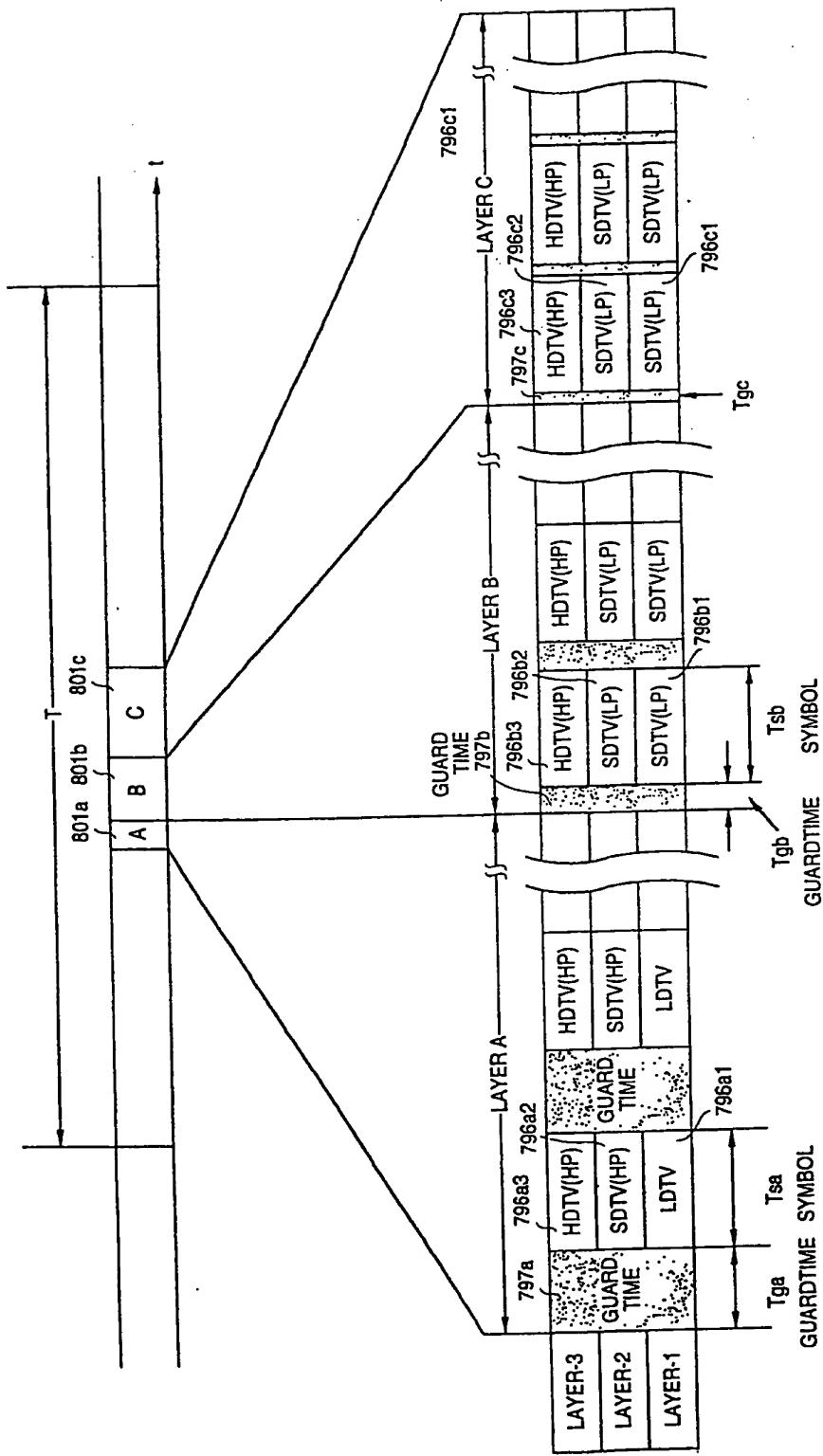
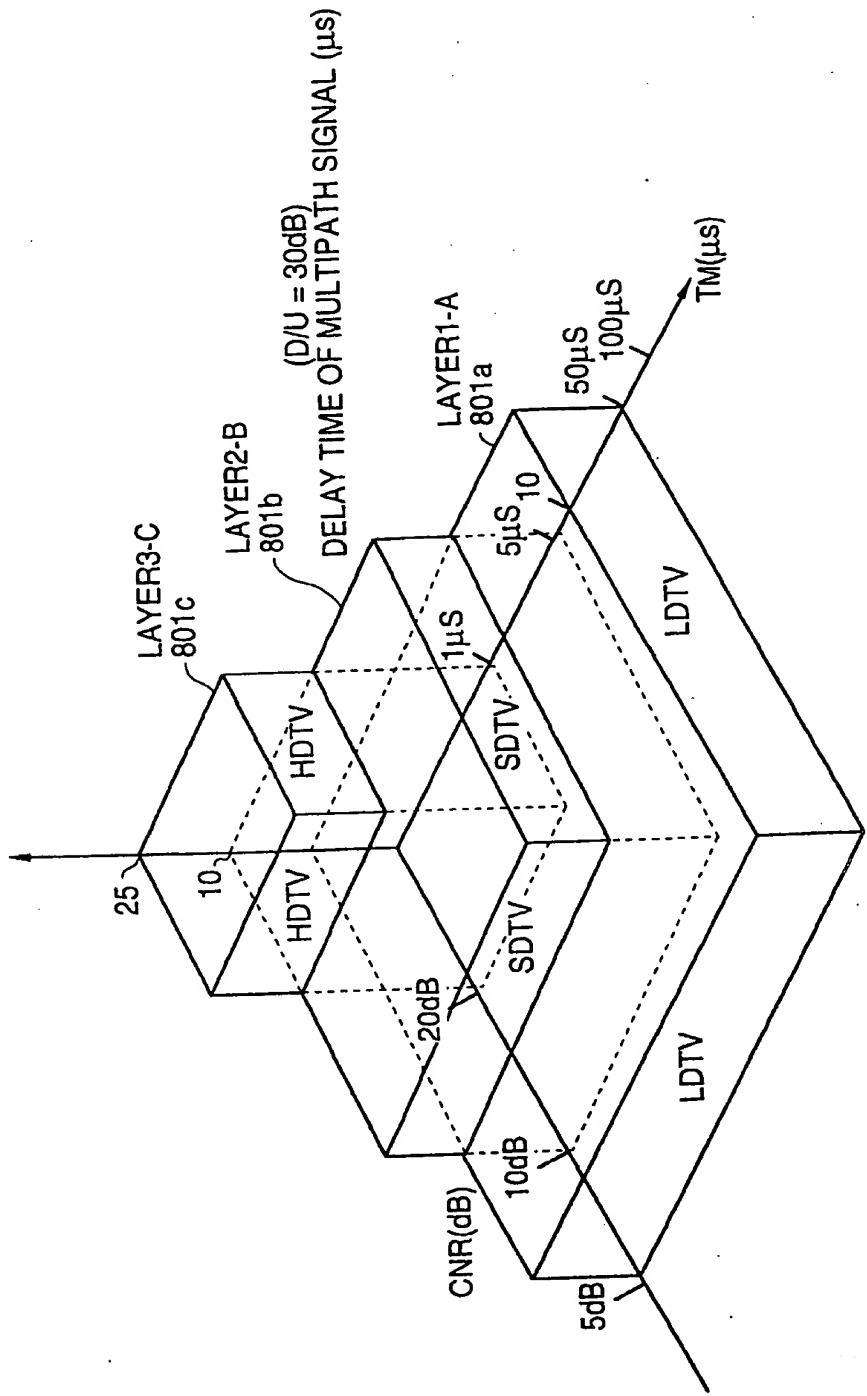


FIG. 153
TRANSFER RATE (Mbps)



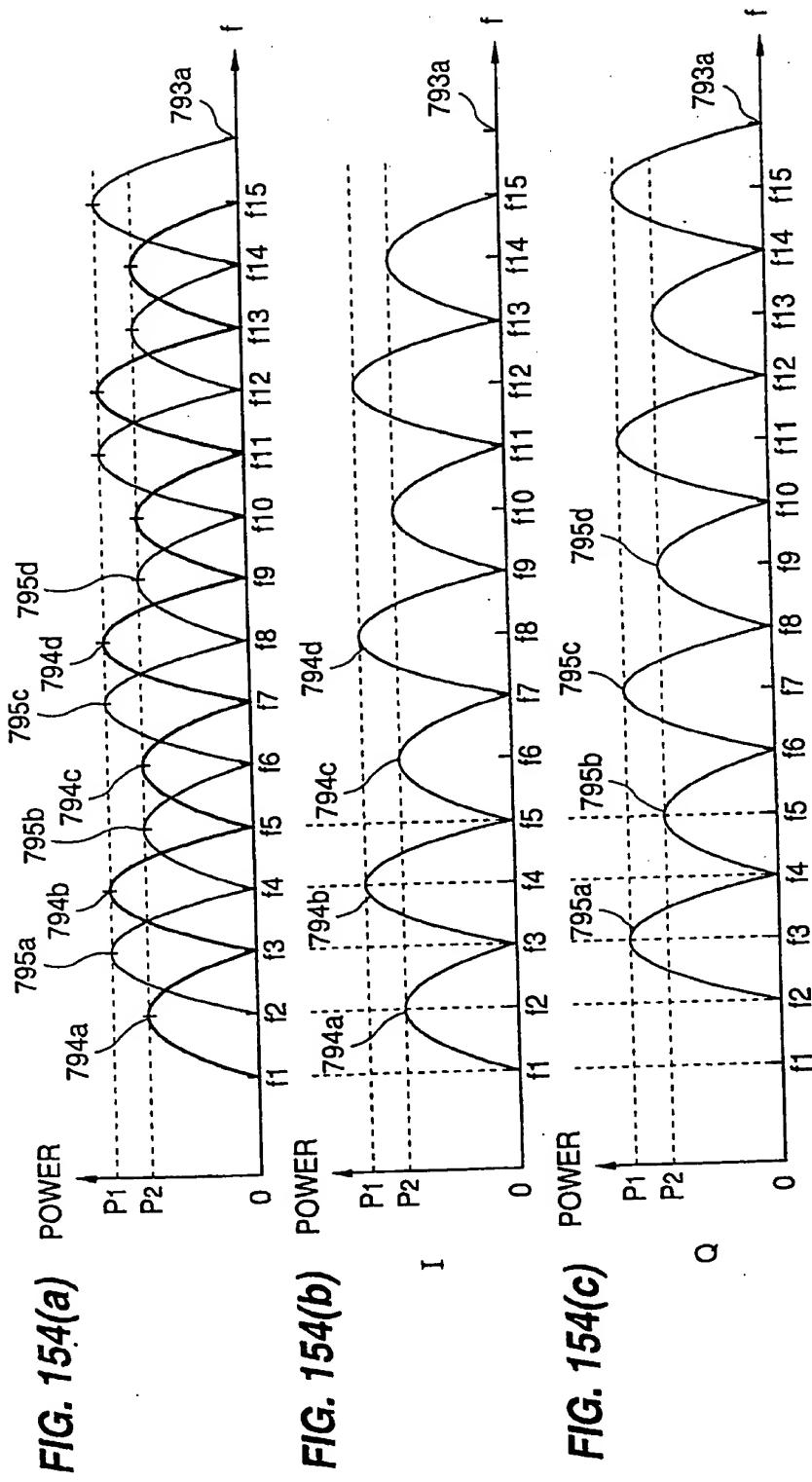


FIG. 155

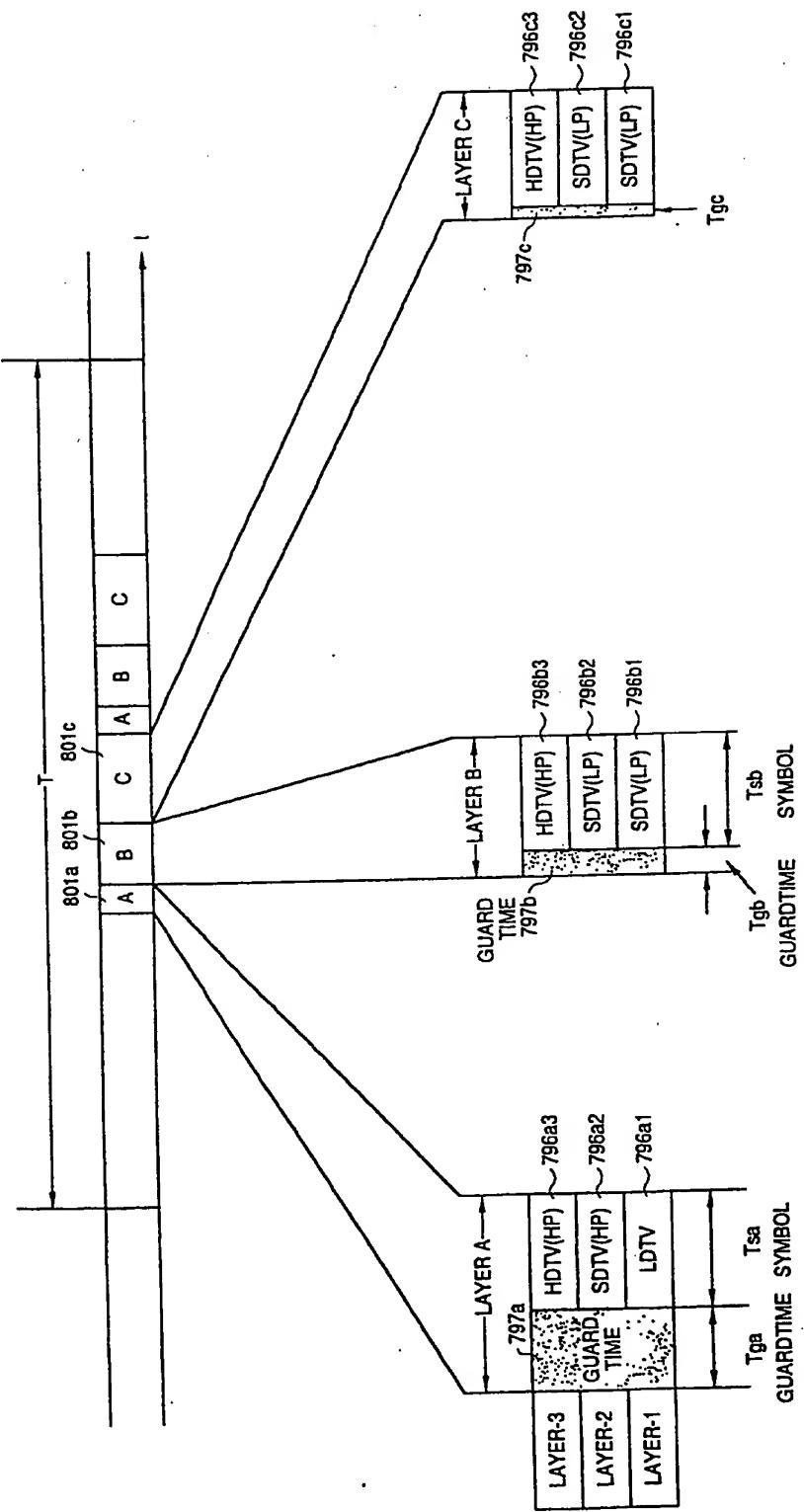


FIG. 156

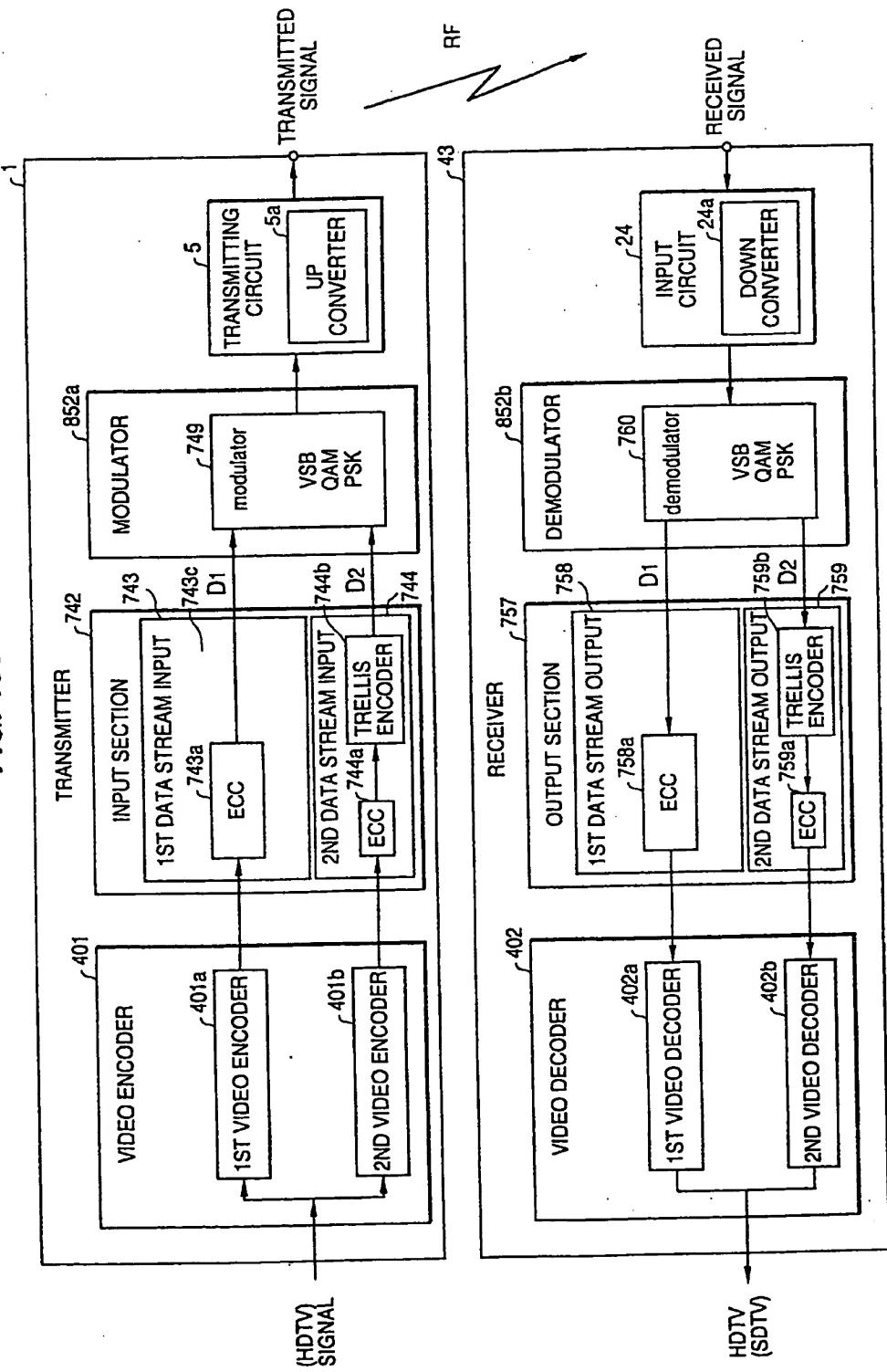


FIG. 157

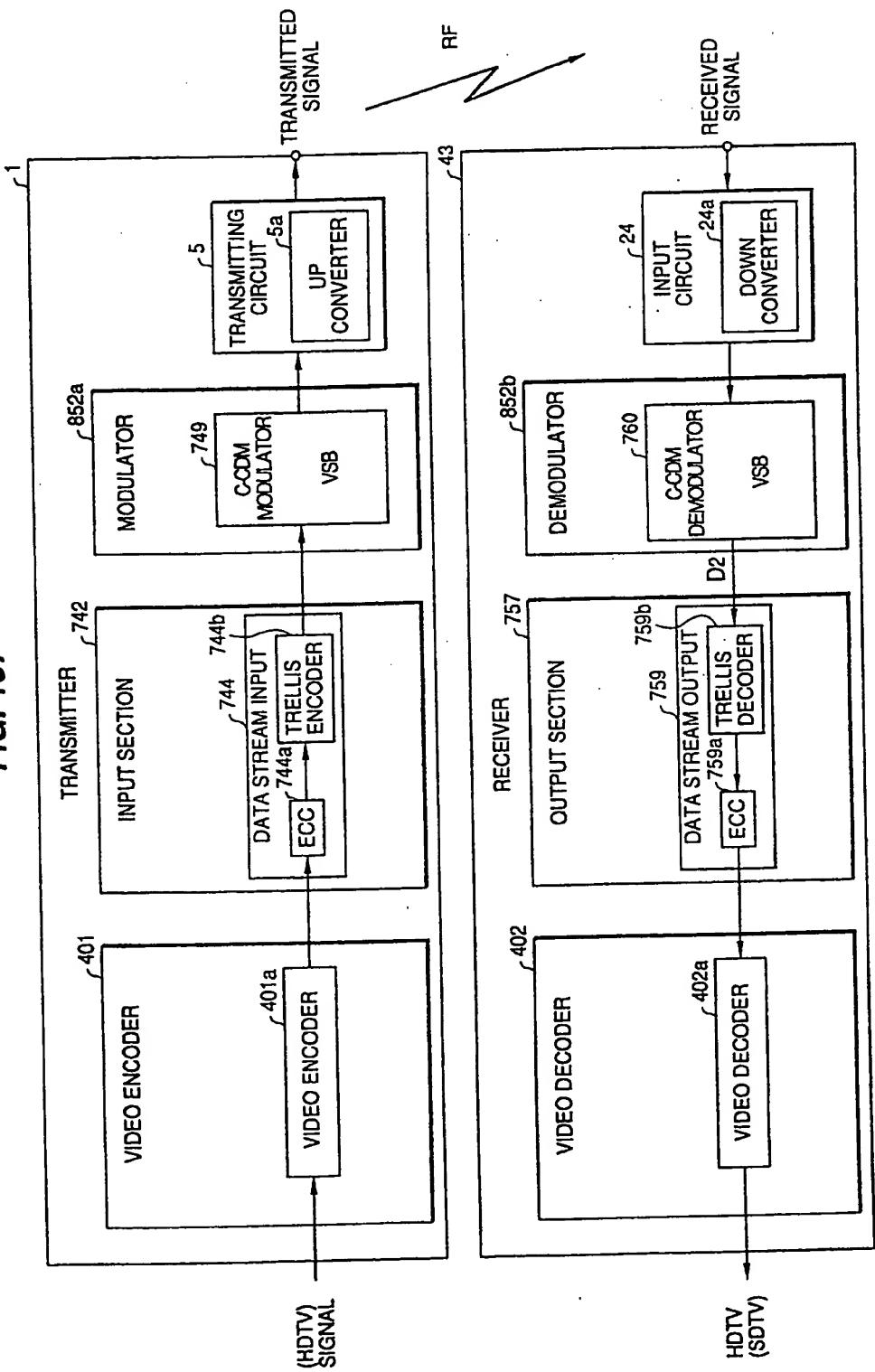
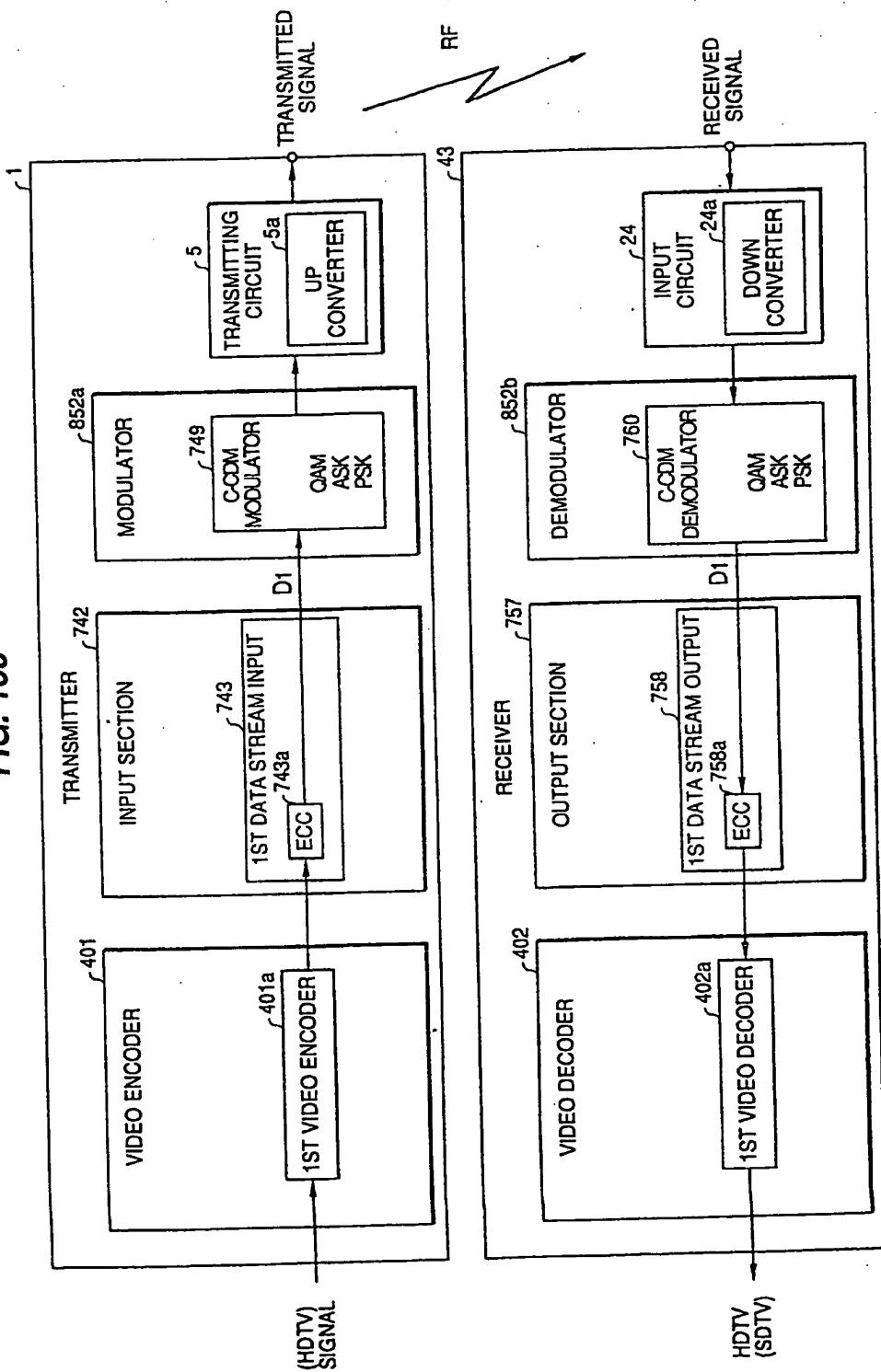
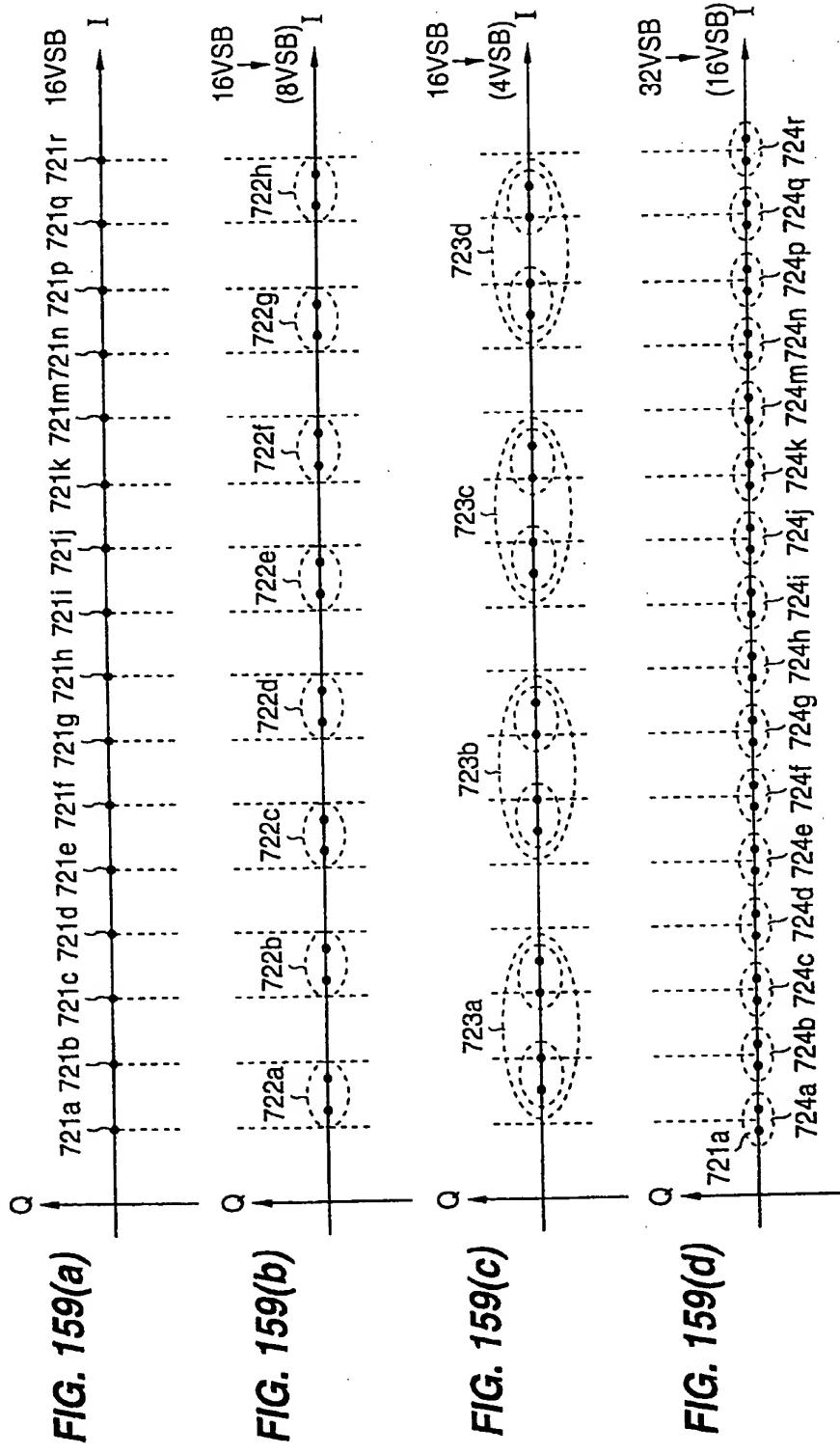


FIG. 158





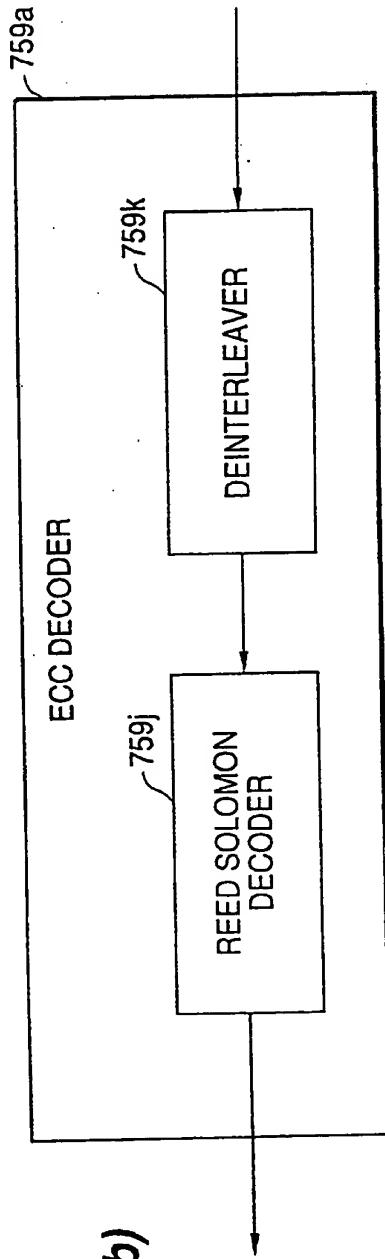
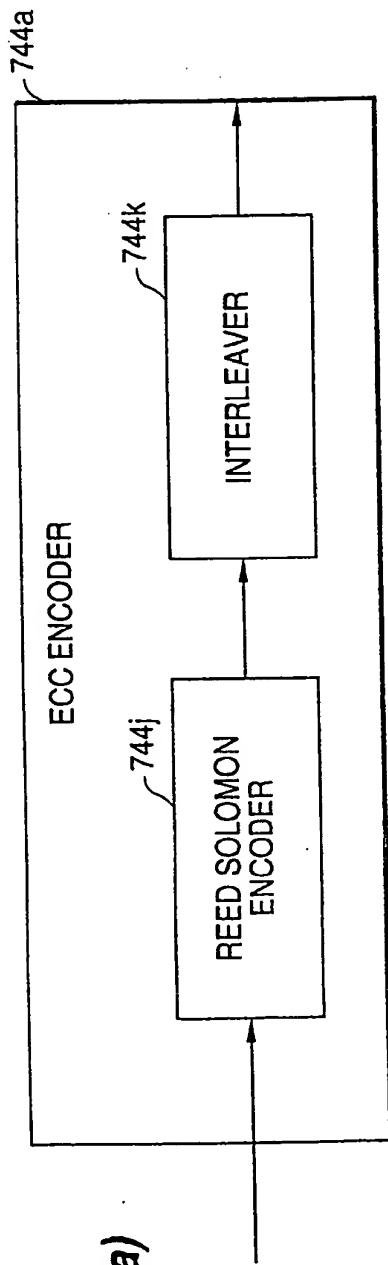


FIG. 160(a)

FIG. 160(b)

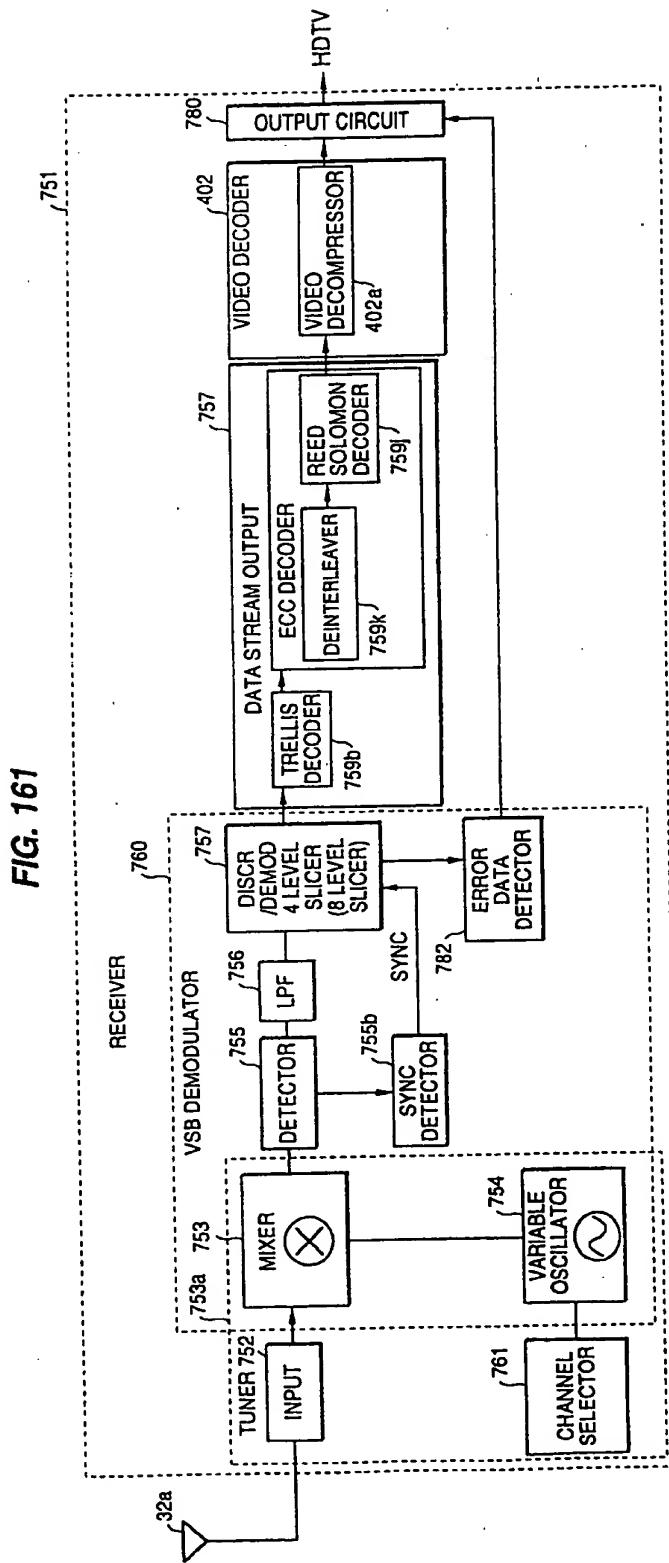


FIG. 162

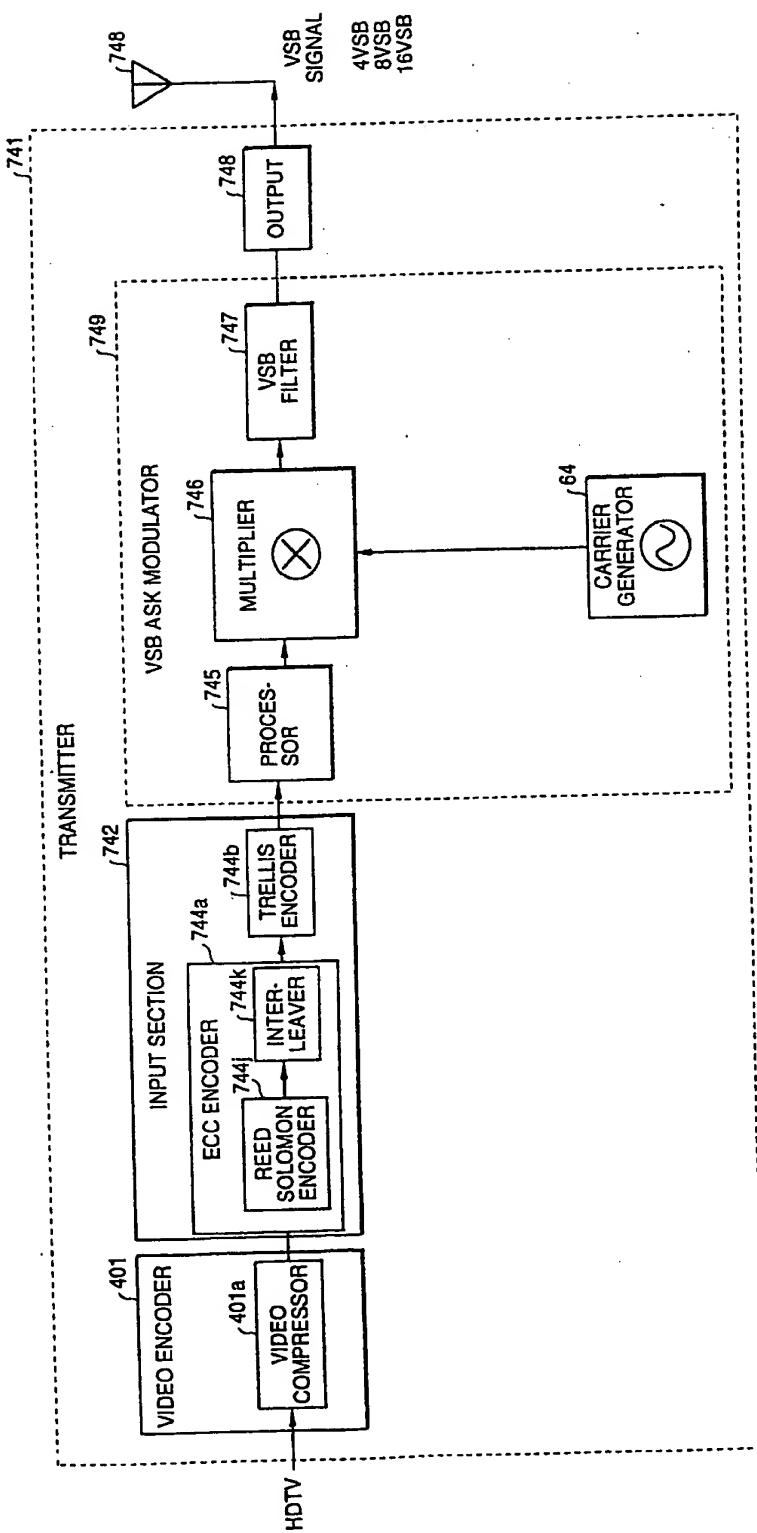


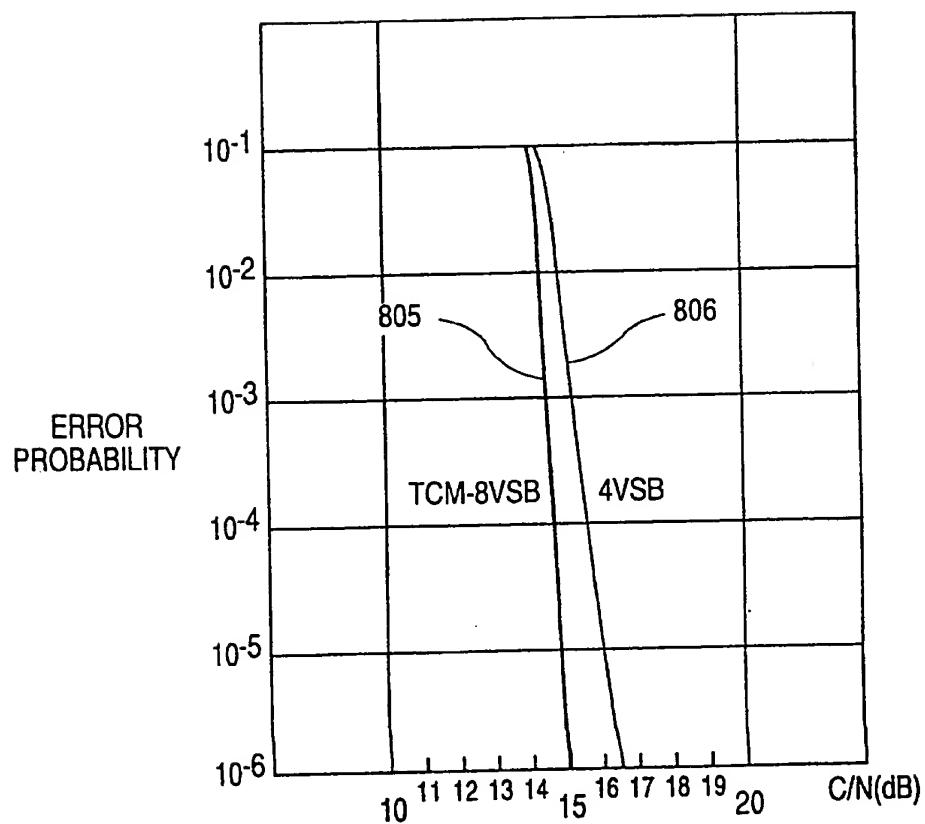
FIG. 163

FIG. 164

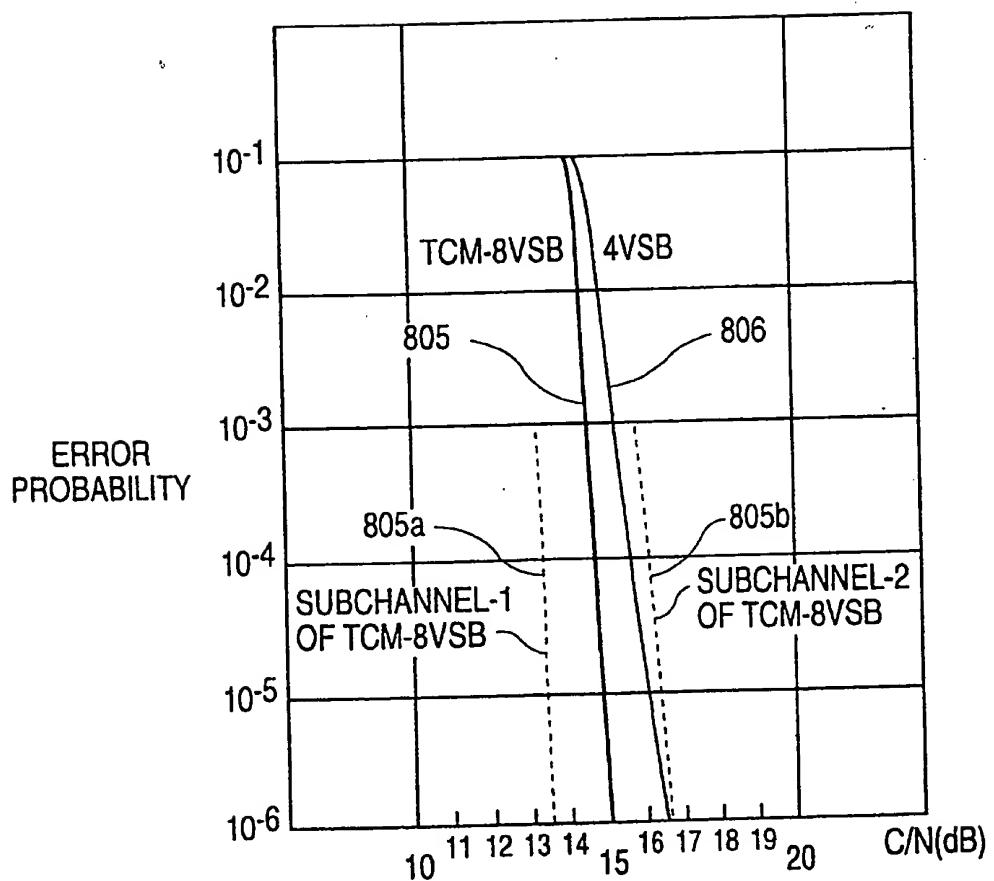


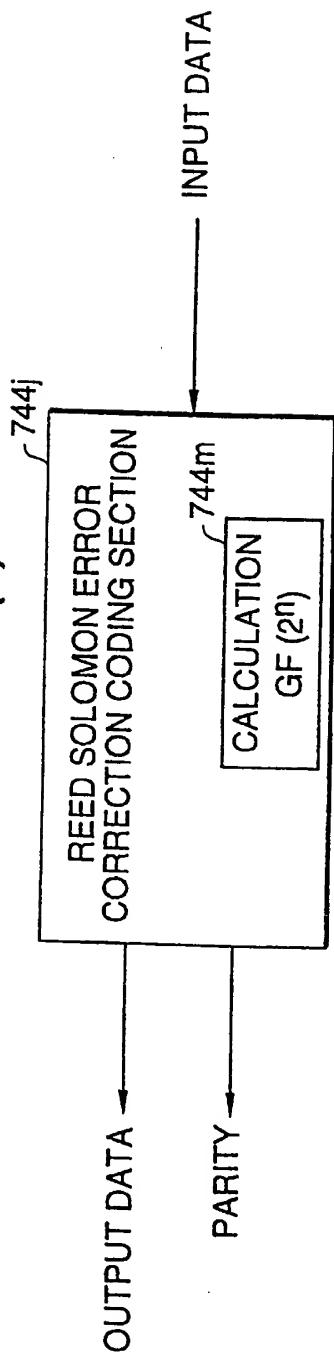
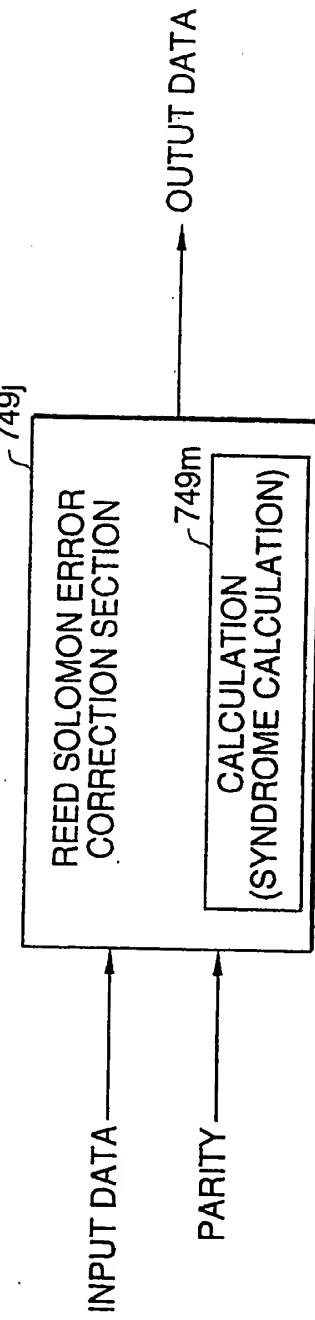
FIG. 165(a)**FIG. 165(b)**

FIG. 166

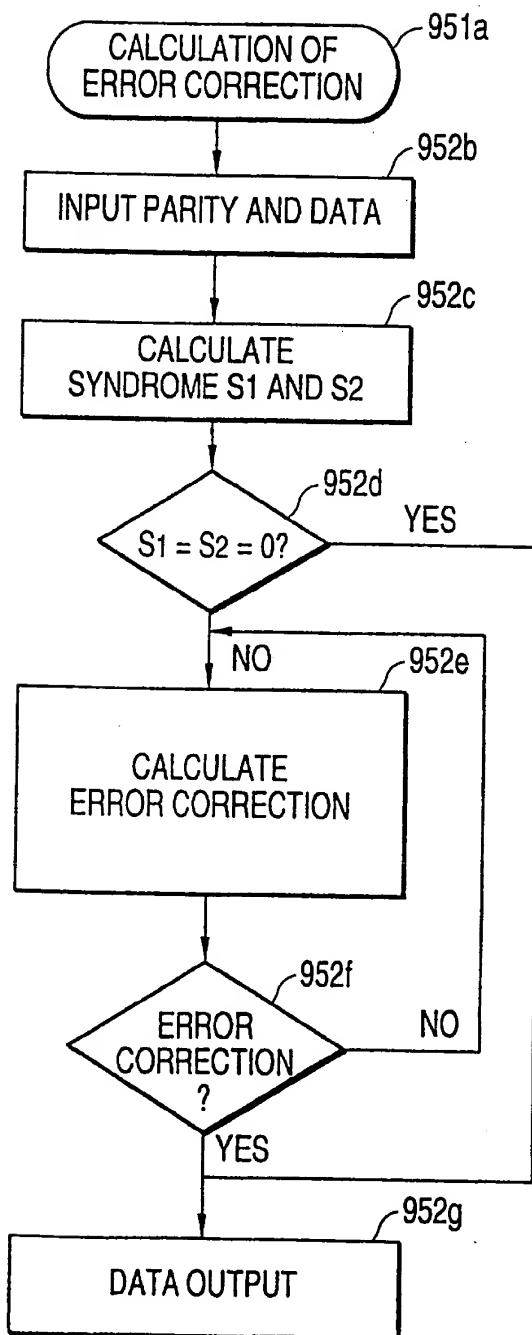


FIG. 167

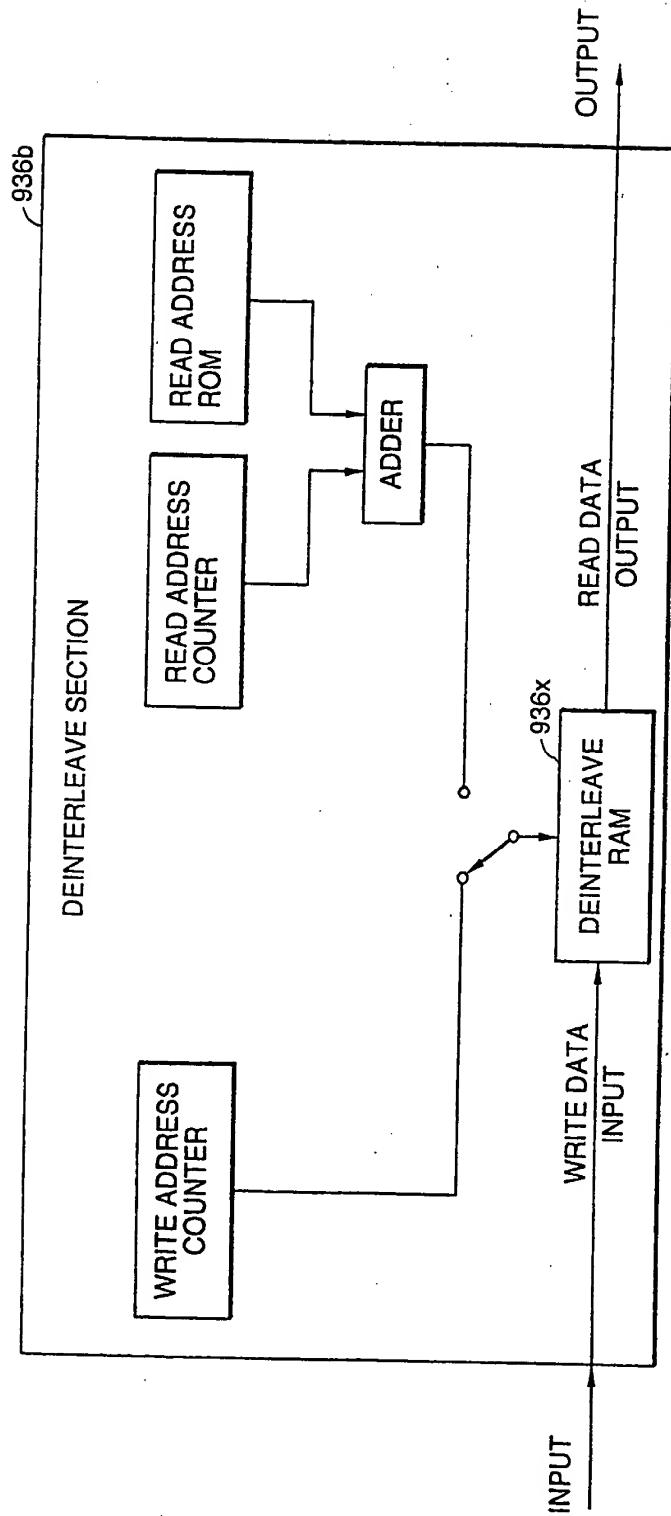


FIG. 168(a)

INTERLEAVE TABLE

	1	2	3	4	5	6	7	C2 PARITY
	DATA							954
1	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆		951a
2	B ₁	B ₂	B ₃	B ₄				
3	C ₁							
4	D ₁							
5	E ₁							
6	F ₁							
C1 PARITY								953

FIG. 168(b)

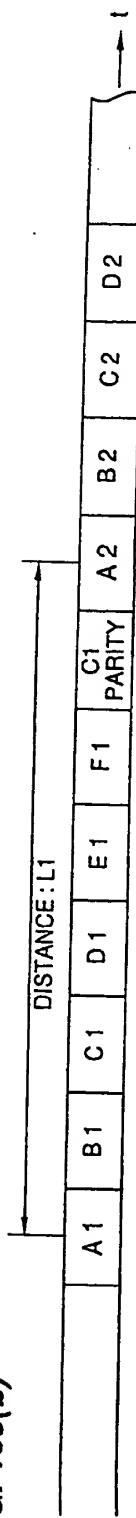


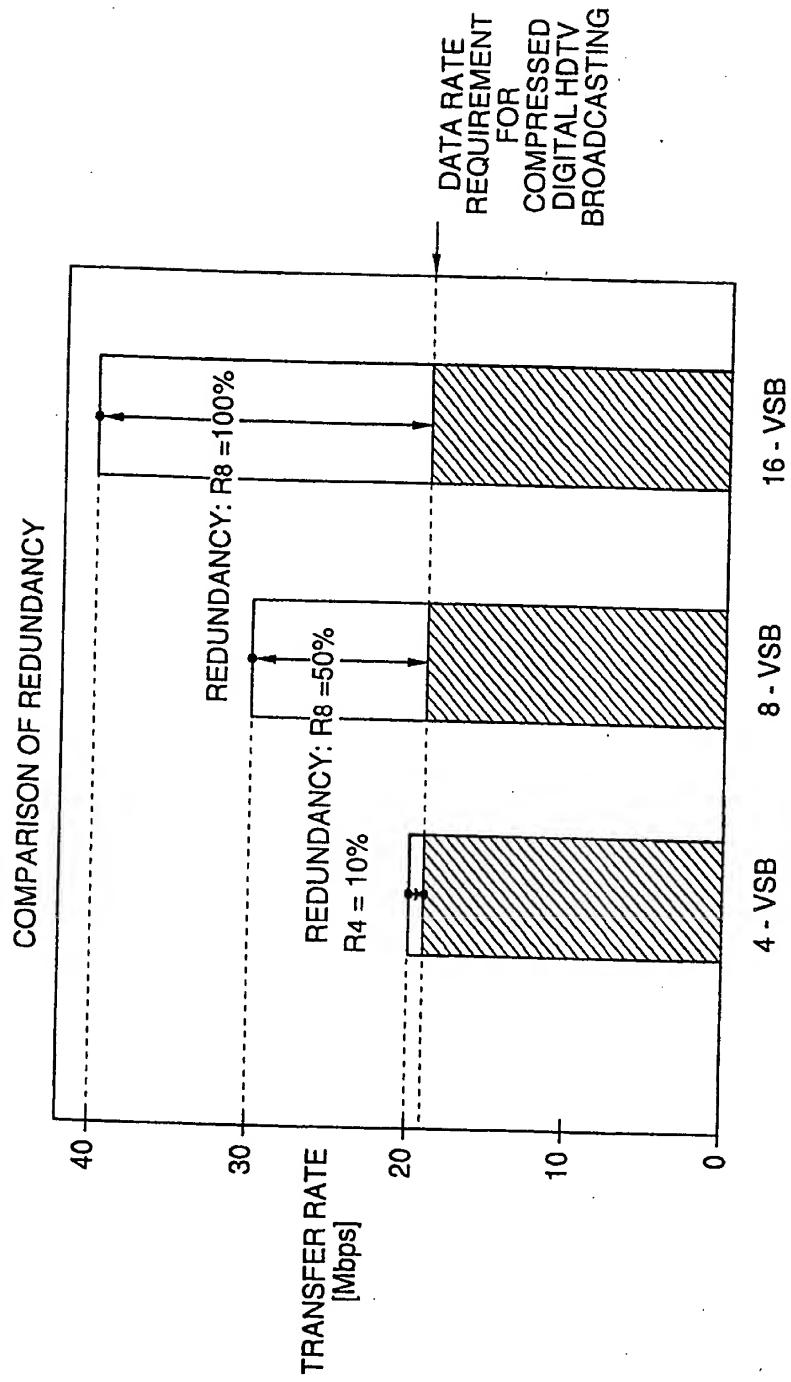
FIG. 169

FIG. 170

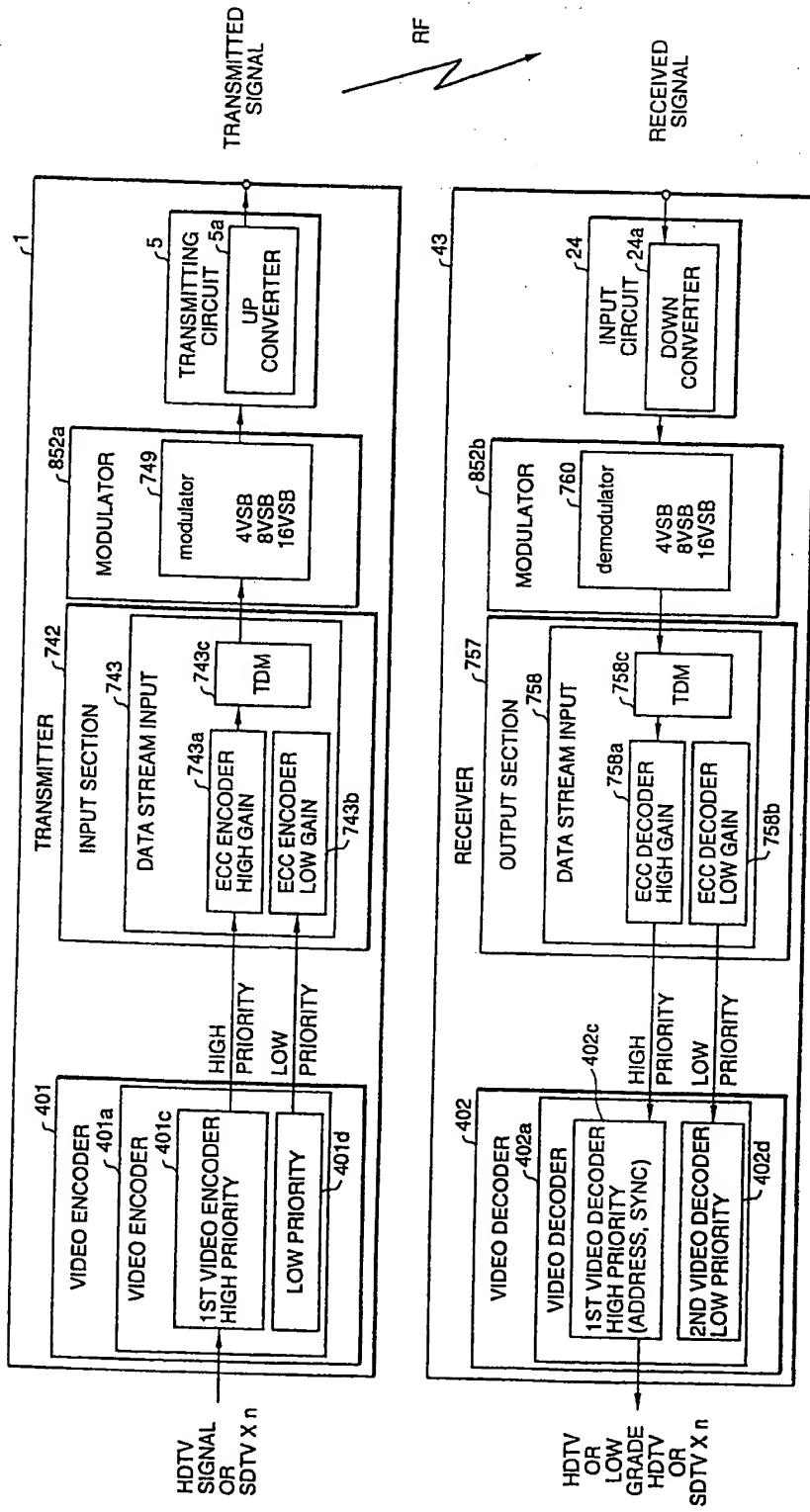


FIG. 171

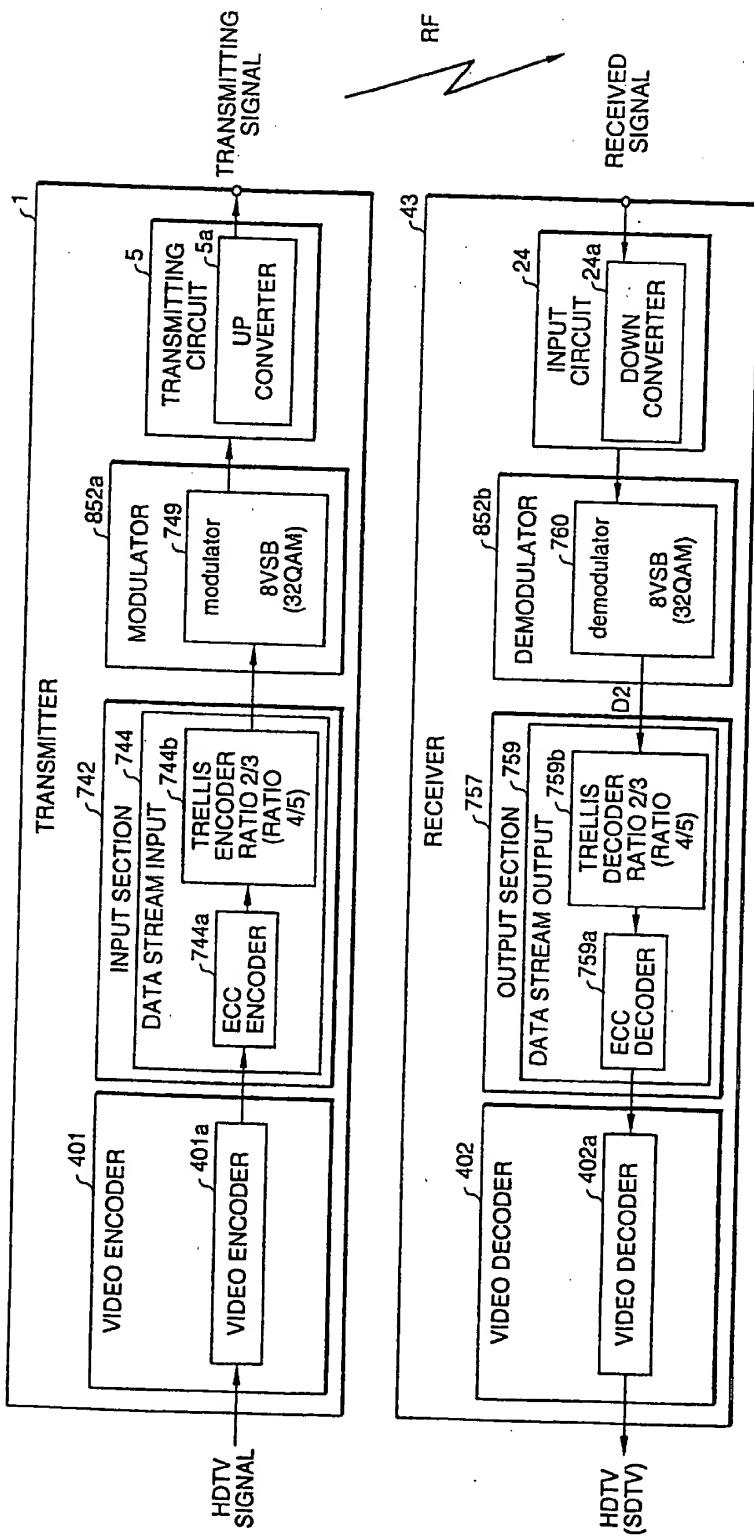
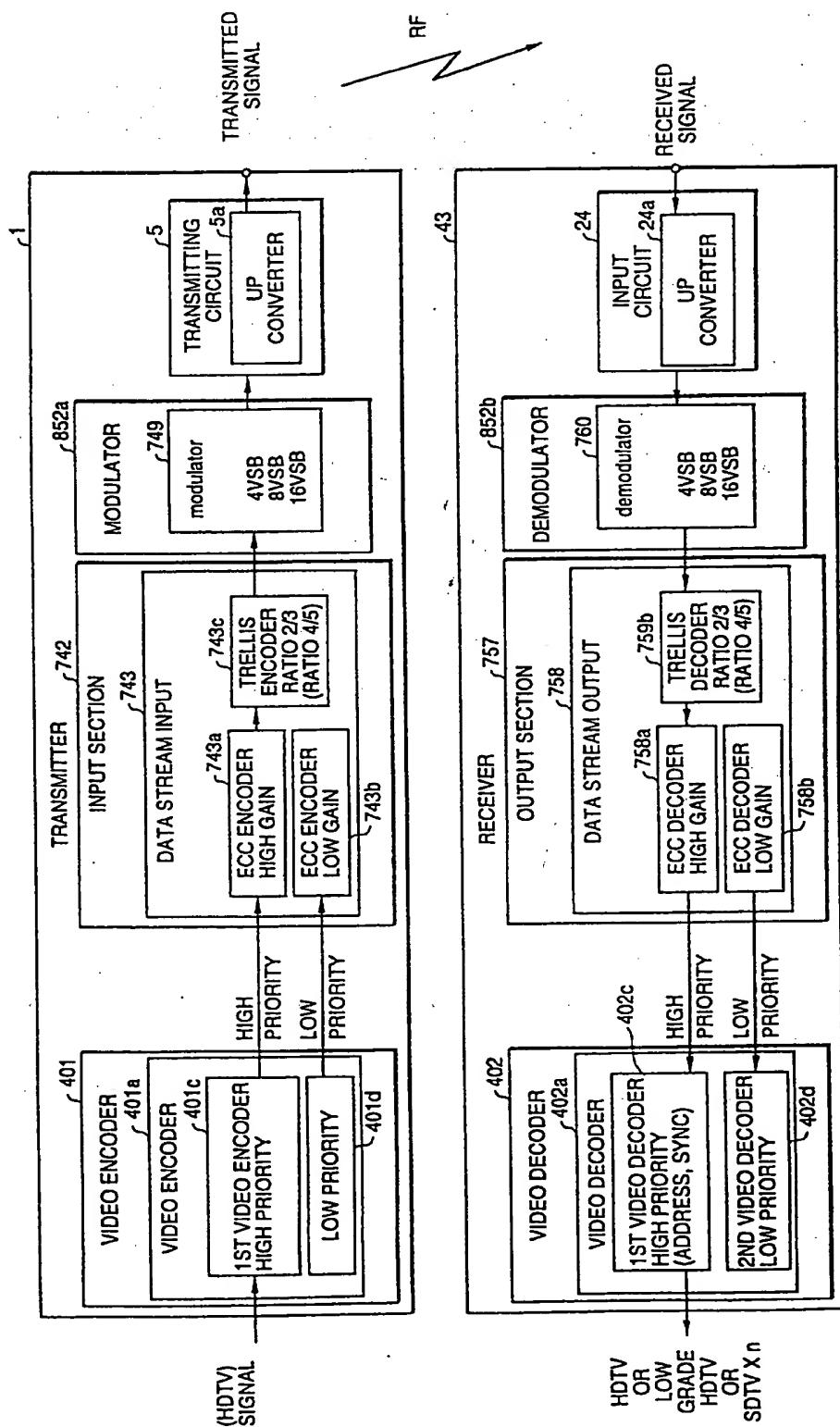


FIG. 172



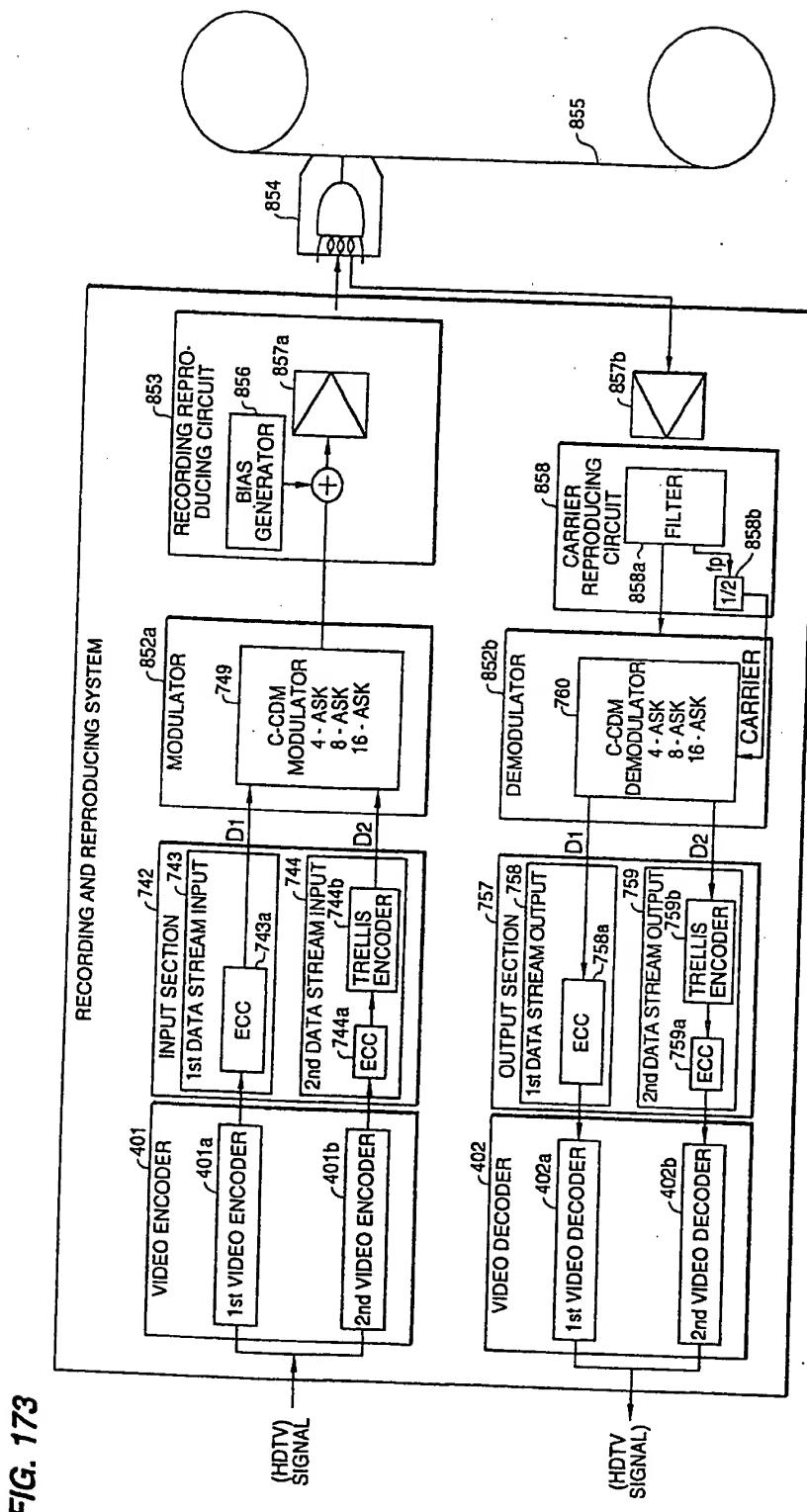
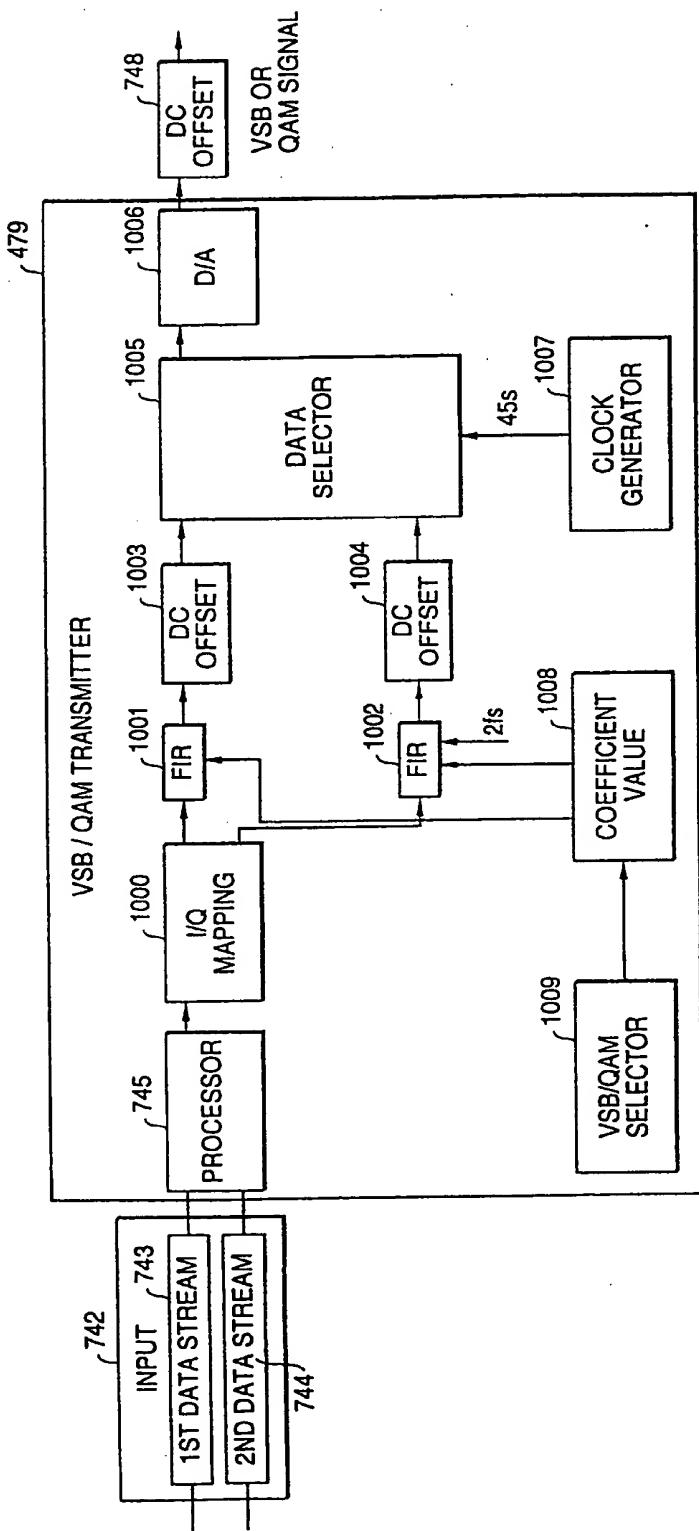


FIG. 174



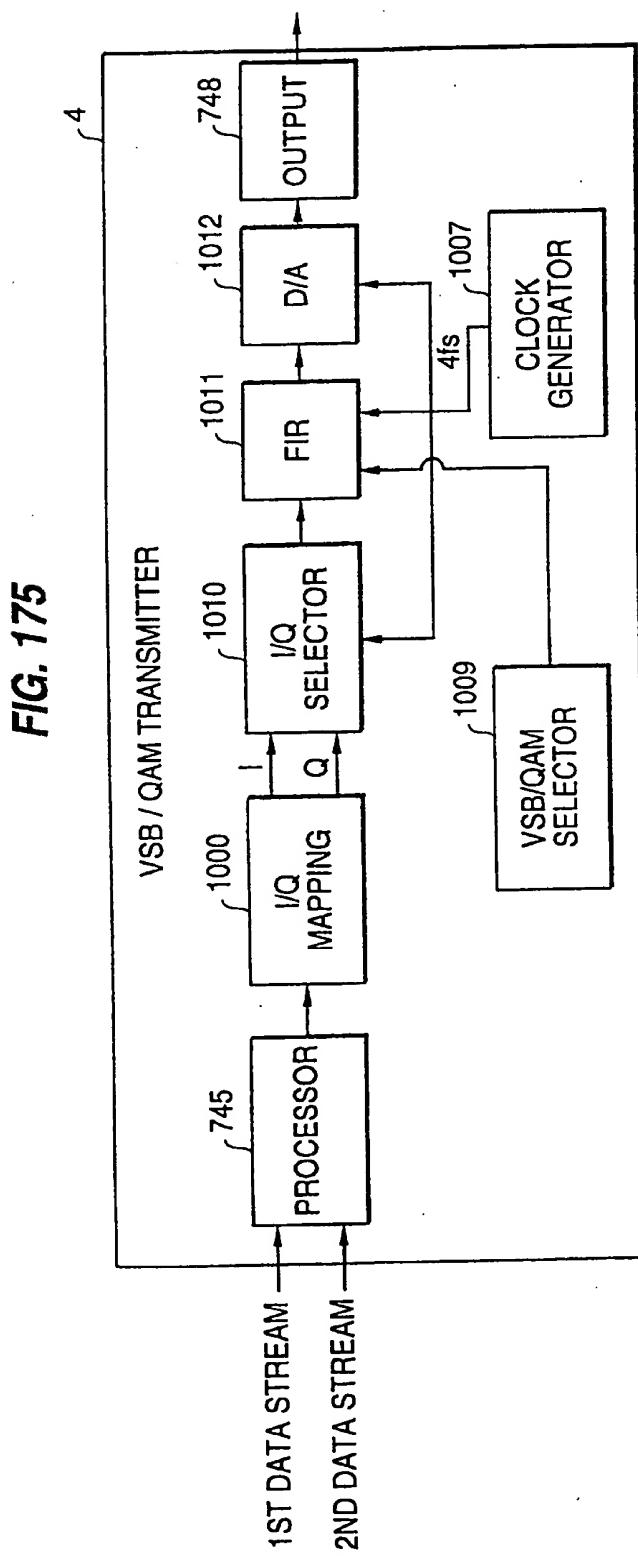


FIG. 176

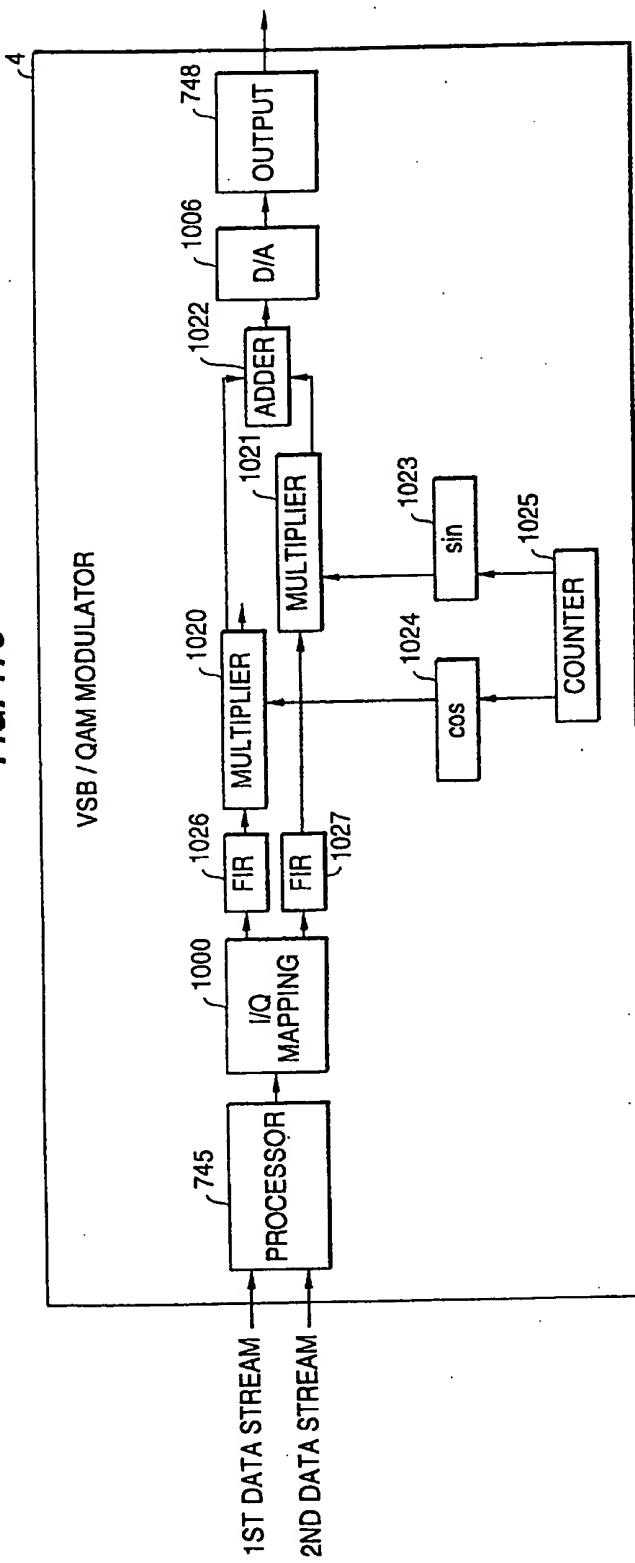


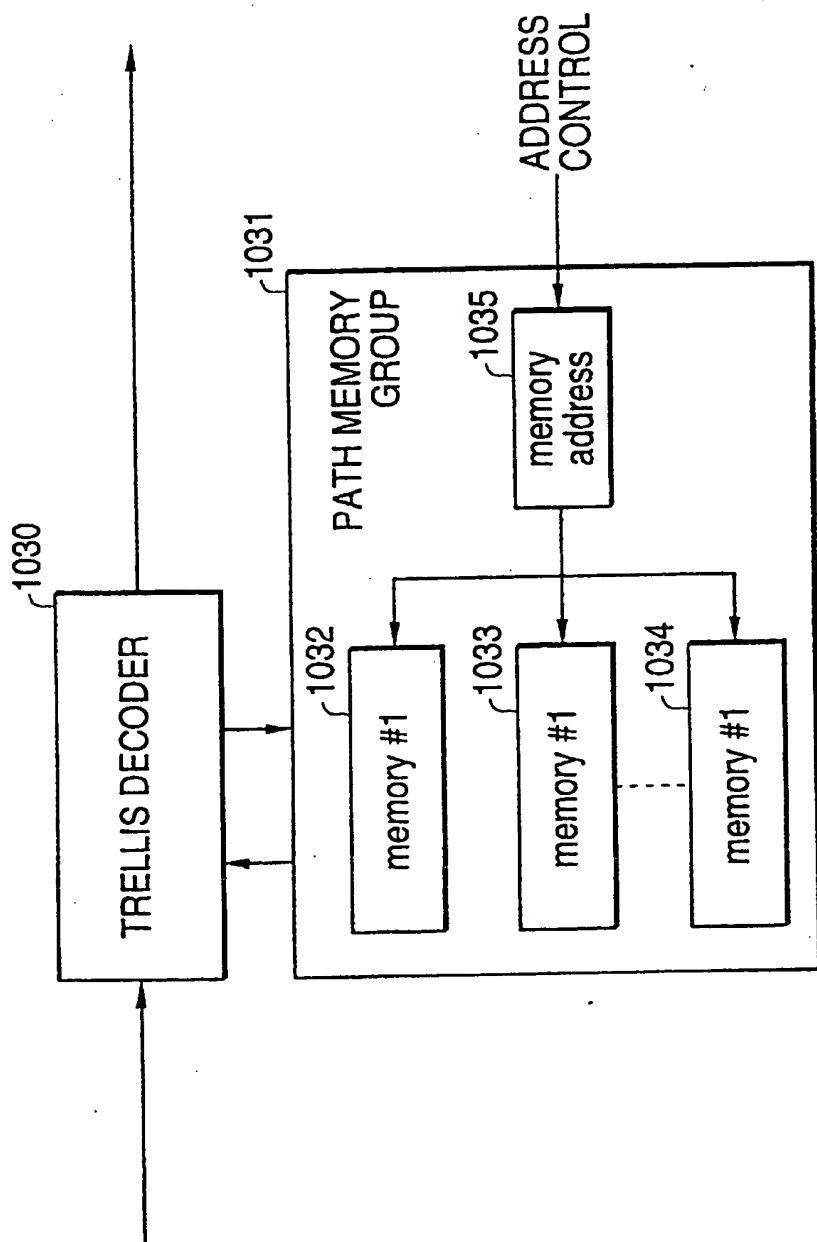
FIG. 177

FIG. 178

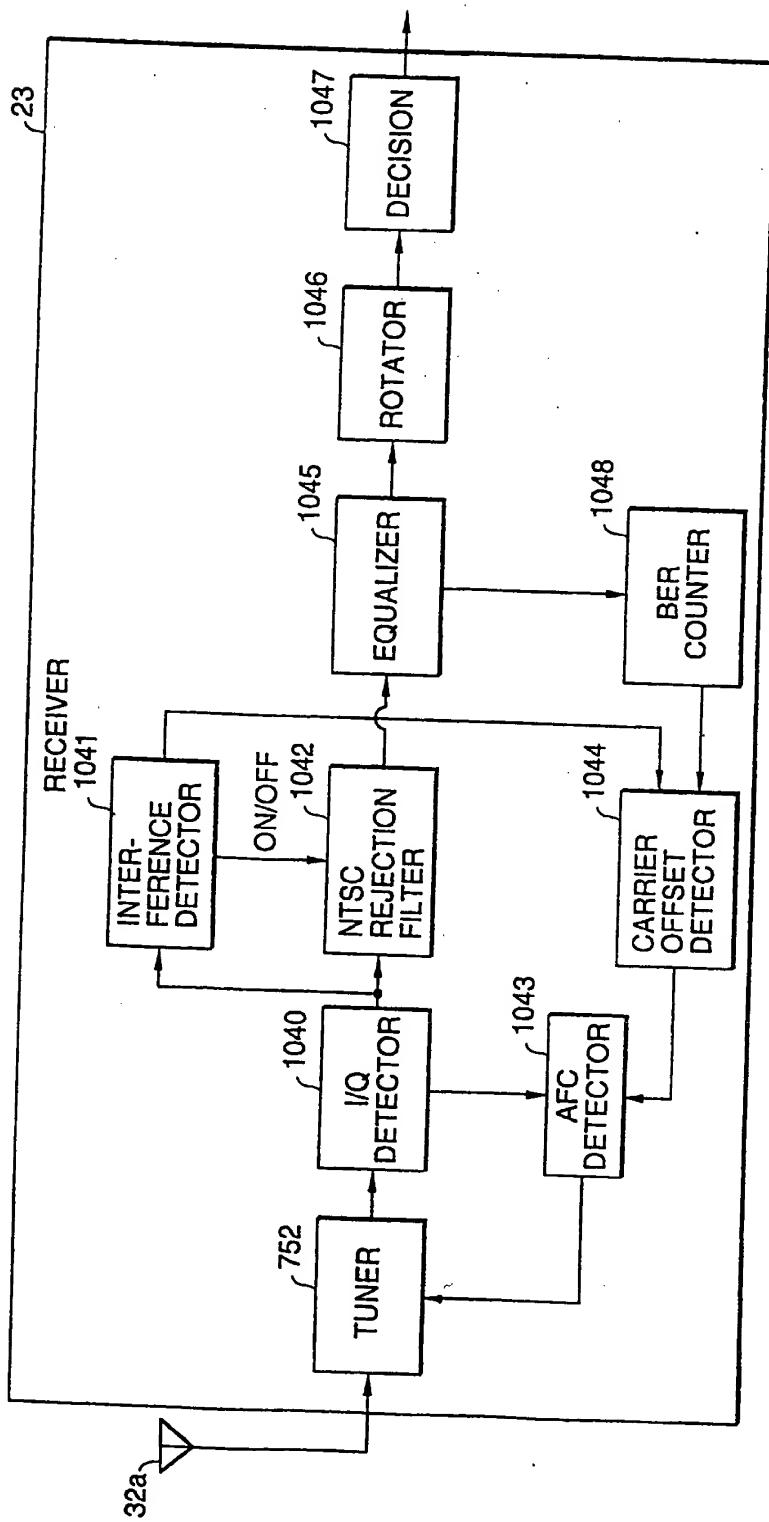


FIG. 179

